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VOL. 87 NO. 7

textile bulletin

JULY • 1961

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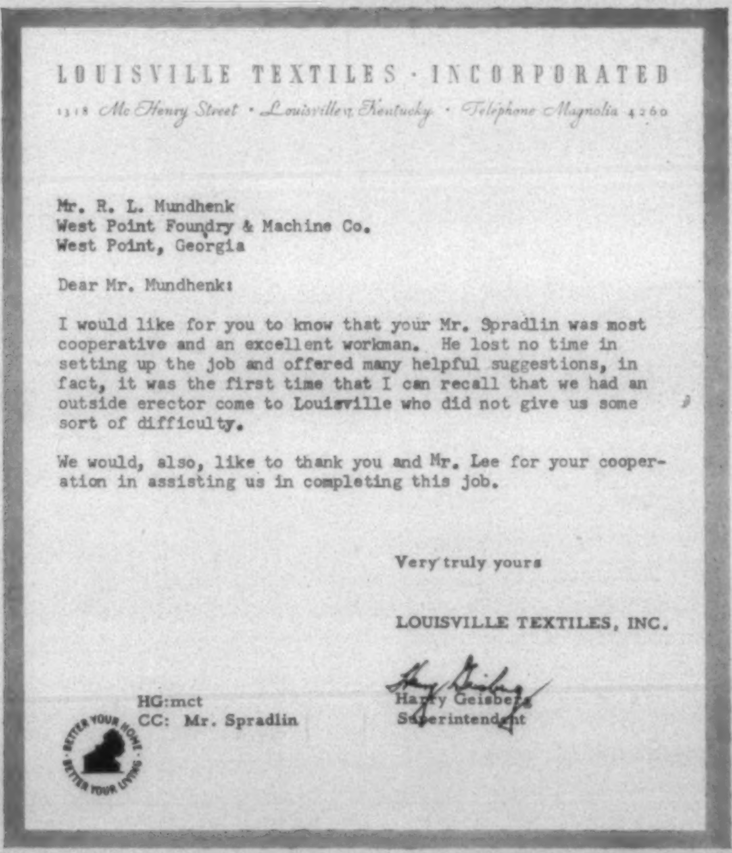


LOUISVILLE TEXTILES · INCORPORATED
1318 McHenry Street · Louisville, Kentucky · Telephone Magnolia 4260

Mr. R. L. Mundhenk
West Point Foundry & Machine Co.
West Point, Georgia

Dear Mr. Mundhenk:

I would like for you to know that your Mr. Spradlin was most cooperative and an excellent workman. He lost no time in setting up the job and offered many helpful suggestions, in fact, it was the first time that I can recall that we had an outside erector come to Louisville who did not give us some sort of difficulty.

We would, also, like to thank you and Mr. Lee for your cooperation in assisting us in completing this job.

Very truly yours

LOUISVILLE TEXTILES, INC.

Harry Geisberg
Superintendent

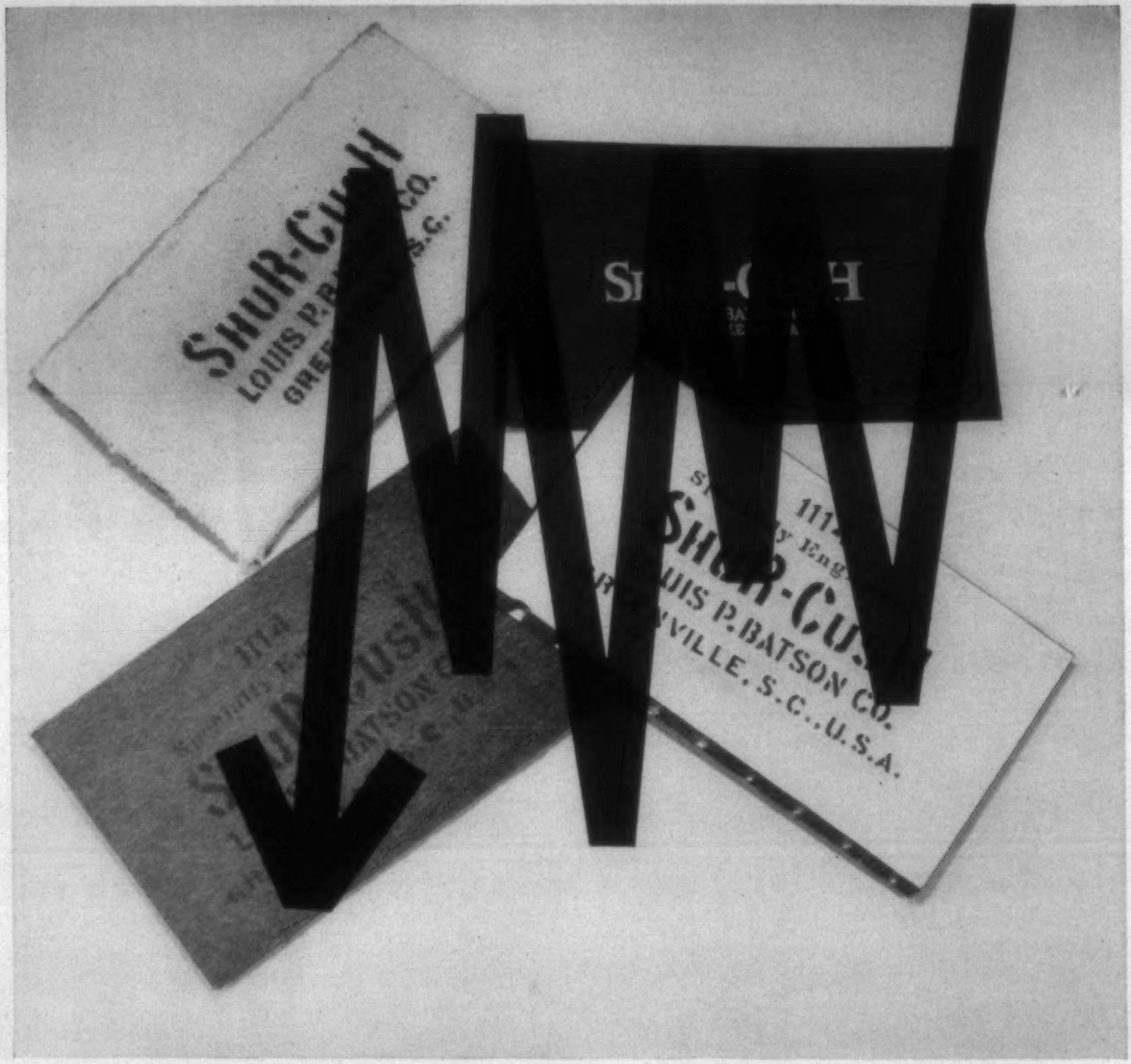
HG:mct
CC: Mr. Spradlin

Everywhere they go West Point's erectors leave satisfied customers!

This is understandable, when you realize that all erectors from the West Point Foundry and Machine Company are craftsmen. Years of experience and continuous training have equipped these men with the technical "know-how" necessary for doing top-quality work. They approach assignments with the same energy, enthusiasm, and ingenuity used by West Point's engineers in making and keeping the PACESETTER SLASHER the performance leader in its field.

Feature for feature
West Point's PACESETTER
SLASHER sets the pace
in quality and production

West Point
Foundry & Machine Co.
West Point, Georgia



HERE'S WHY YOU SHOULD ALWAYS SPECIFY BATSON'S SHUR-CUSH PRECOATED OR PLAIN FOR ALL VIBRATION ABSORPTION:

1. Complete quality range . . . from the cheapest that's good to the best that's made. Quality mountings are re-usable when machine is re-located.
2. Complete thickness range . . . from 1/32" to 2".
3. Complete density range.
4. Complete size range. Batson's complete cutting facilities mean you can order: cut-to-size, odd sizes and shapes, rolls, sheets, strips.
5. ShuR-CusH available precoated or plain.

   Apply precoated with its own pressure-sensitive adhesive on both sides.

   Apply plain ShuR-CusH with Batson's ShuR-CusH Adhesive. Maintains bond and actually improves with age because it contains no asphalt derivative to harden and reduce absorbability of mounting.
6. Prompt delivery. Batson always has a complete range of ShuR-CusH in stock ready to rush to you promptly when you need it!

THE 'P' IS FOR PRONTO!

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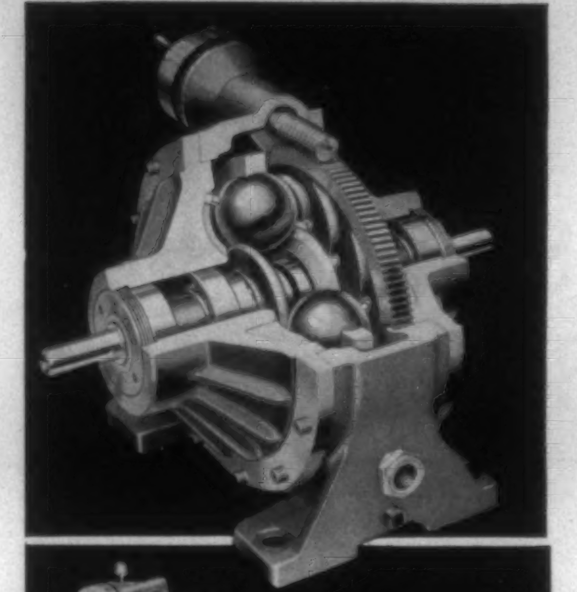
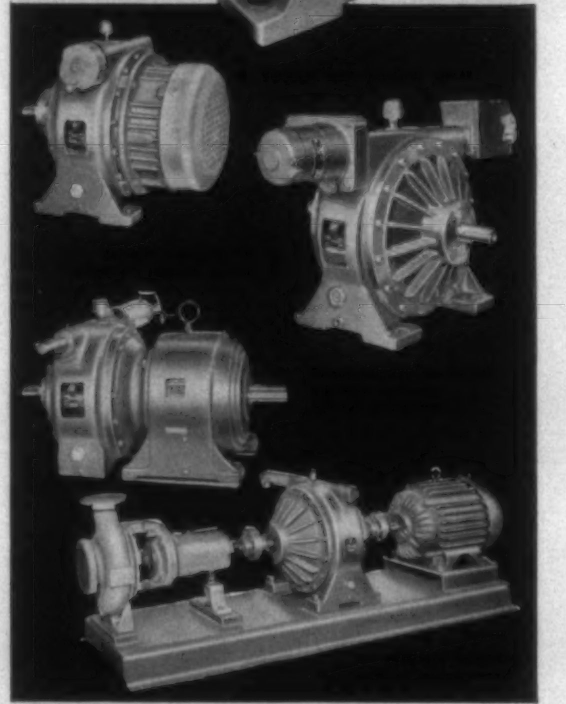
Box 3978 • Park Place • Greenville, S.C.





for accurate, dependable, infinitely variable speed control, specify...

CLEVELAND SPEED VARIATOR

Cleveland Speed Variators are simple in operation . . . built for long life. Eighteen models—including a new motorized unit—range from fractional to 16 hp at 1750 input RPM. They all accurately provide dependable, infinitely variable speed control over a full 9:1 range—from ⅓ to 3 times input speed. Instant smooth change of output speed can be adjusted by either manual, automatic or remote control. Precise adjustments are always made with accurate adherence to settings.

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- An extremely compact unit with input and output shafts in line and rotating in the same direction.
- Almost any input speed up to 1800 RPM can be used—either clockwise or counterclockwise rotation.
- Rated for constant horsepower output over a 9:1 or 6:1 range; or for constant output torque over a 6:1 range.
- Speeds infinitely variable over entire range of adjustment.
- No slippage—positive torque response mechanism adjusts in direct proportion to the loads encountered.
- Long life and minimum maintenance due to absence of belts or complicated linkages.
- Ample bearing support for overhung pulleys on both input and output shafts.

Write today for free Bulletins and Data Sheets shown at left. They contain detailed description, photographs, sectional drawings, rating tables and specifications for the versatile Variator.

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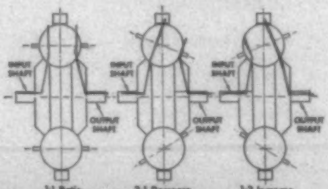
Power is transmitted from input shaft to output shaft — rotating in the same direction — through alloy steel driving balls which are in pressure contact with the drive discs. Relative shaft speeds are adjusted by changing position of axles on which the balls rotate.



1:1 Ratio 3:1 Decrease 1:3 Increase

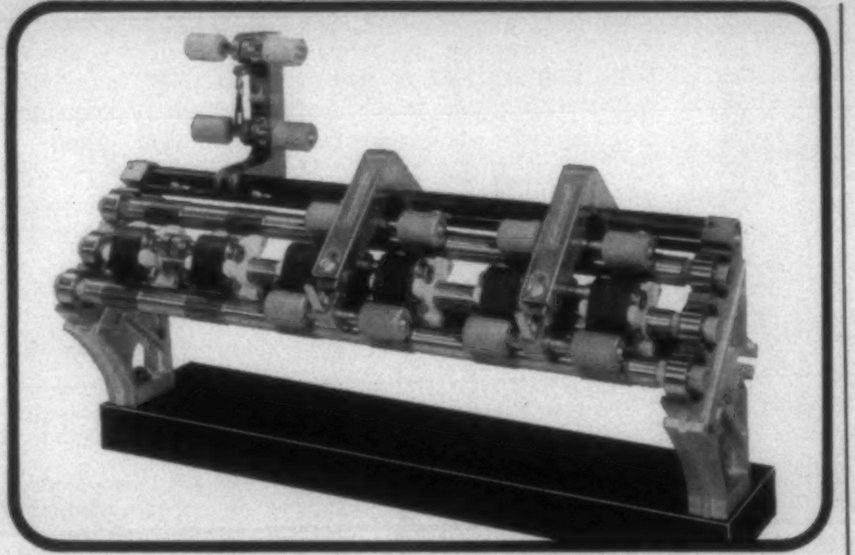
CLEVELAND
PEE VARIATOR

YARN MAKING MACHINERY

ROBERTS NEWS

COTTON, WORSTED OR LONG FIBER SYSTEMS

Roberts FC Drafting System . . . Cleanest, Simplest, Best Yarn Quality



FC Drafting clears roll beam of all weighting attachments. Ball bearing bottom rolls on all three lines, shown above, are optional.

- Cleanest Running — Easiest to Clean
- Simplest — Fewest Number of Parts
- Highest Yarn Quality — Stronger, More Even Yarns
- Broadest Versatility — Cotton, Synthetics, Blends
- Short or Long Staple — Synthetics 1$\frac{9}{16}$" to 3"
- Coarse or Fine Yarns — 2s to 120s
- High Draft — 10 through 60
- Cartridge Weighting
- Roll Beam Clean — No Weighting Attachments
- No Lever Screws, Weight Levers and Hooks, Dead Weights
- PosiWate Pendular Arm Suspension — Positive Weighting
- No Oil in Entire Drafting Zone
- 3 Lines Ball Bearing Top Rolls
- Ball Bearing Bottom Rolls Optional
- Hardened Bottom Rolls with EvenGrip Fluting
- Nylon Cradles with Choice of Pin Opening
- Reduces Weight on Frame by ¾ of a Ton

Roberts Company has achieved a most precision made cotton spinning system with its FC Drafting. It is the cleanest running, and the simplest with the fewest number of parts. It consistently gives the highest yarn quality from spindle to spindle and from year to year.

Dramatically new and improved in FC Drafting is a cartridge weighting arrangement which eliminates all weighting attachments to the roll beam, disposing of the lever screw, weight lever, weight hook and dead weight.

Used instead is an enclosed spring cartridge attached to a cartridge bar fastened between roll stands. A simple lever is depressed to unweight or to weight up the top rolls. There are no short springs inside the pendular suspension.

WIDE VERSATILITY

Coarse or fine yarns from 2s to 120s, cotton or synthetics and blends, and a broad range of drafts from 10 to 60, are efficiently handled by new FC Drafting.

Proper, efficient fiber control, fiber gripping and weight is provided without the limitations of other systems using short springs, weights or magnets.

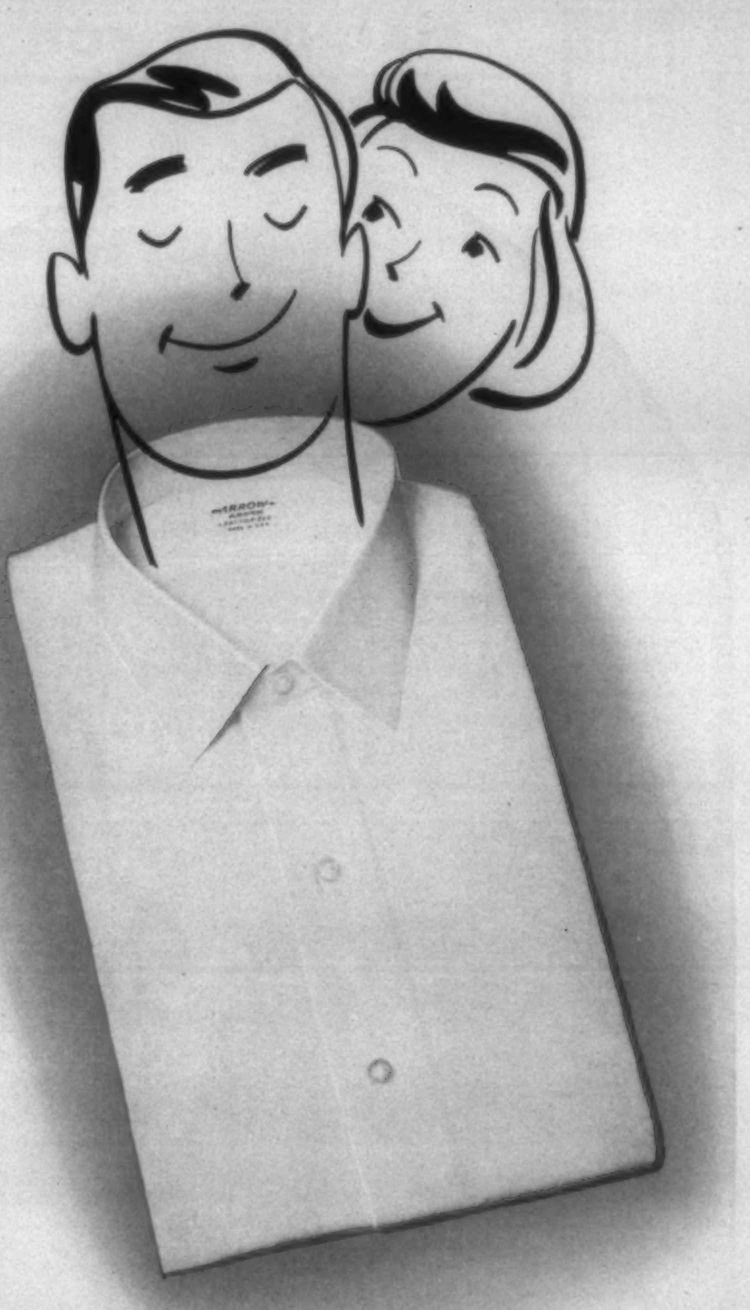
FC Drafting can be arranged to handle short or long staple cotton, and synthetic fibers from 1$\frac{9}{16}$" to 3" long. A choice of cradle lengths and solid or recessed apron top rolls provides this flexibility.

One arrangement handles cotton up to 1$\frac{3}{16}$" long and synthetic fibers 1$\frac{9}{16}$". Recessed top apron rolls may be used for synthetics of 2" to 2½" long. Another arrangement handles regular running of long staple cotton up to 1$\frac{9}{16}$", or synthetics of 2" and less. The recessed roll extends this to 3" synthetics.

Send for Bulletin. **For further information on Roberts FC Drafting write for Technical Bulletin FC-101.**

ROBERTS COMPANY **Sanford, North Carolina**

Arrow Spinning Frames for Cotton and Worsted Systems • Twisters and Roving Frames
Tow-Transformers • ParaBlenders • ParaDrafters • AutoEveners



Solvay Activated Hydrogen Peroxide Bleaching Process gives

a whiter, brighter white to Arrow shirts

You always look your best in an Arrow shirt . . . there's good reason. Cluett, Peabody & Co., Inc., maker of Arrow shirts, puts full emphasis on highest quality production. And that's the major reason they have adopted the *Solvay Activated Hydrogen Peroxide Bleaching Process.* It produces better hand and superior whiteness without harm to the goods.

Like Cluett, Peabody & Co., Inc., you can use the Solvay Activated Hydrogen Peroxide Bleaching Process to obtain higher quality, whiter cottons at no increase in cost. Or, if you prefer, you can get whiteness equal to your present results with a marked decrease in chemical costs.

Although the Solvay Activated Hydrogen Peroxide Bleaching Process is a relatively new method developed by the Solvay Process Division for bleaching cotton, it is already in full-scale, commercial operation in a number of plants. It is available to you under royalty-free license.

Solvay technical service is available, without obligation, to help you evaluate this new process for your plant. Or, send for Solvay's free booklet which gives a complete description of the techniques and results you can expect.

Free technical bulletin—Fully describes details of the process . . . applications, advantages, cost analysis and comparative quality. It's free . . . no obligation . . . write Solvay today.

SOLVAY® CHEMICALS FOR TEXTILES

Caustic Soda • Chlorine • Hydrogen Peroxide • Sodium Nitrite
Mutual® Chromium Chemicals • Potassium Carbonate • Soda Ash

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SOLVAY PROCESS DIVISION
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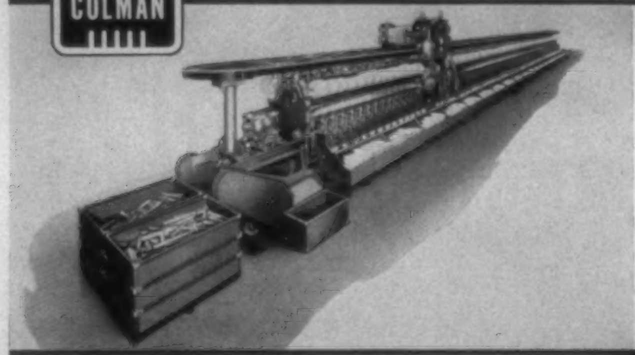
BARBER COLMAN

MACHINES FOR MODERN MILLS

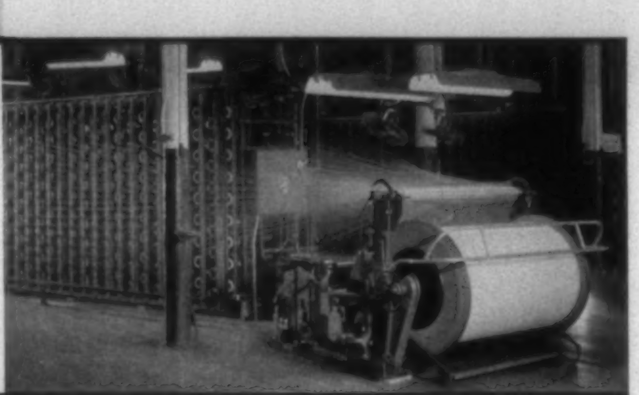


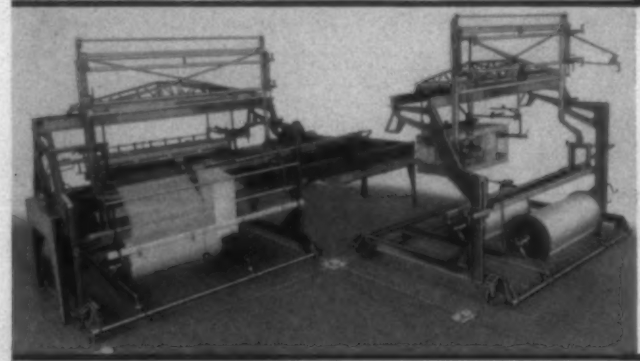
NEW TYPE "F" AUTOMATIC SPOOLER

Increased capacity in the new Type "F" Spooler permits spooling of cheeses and cones up to 6½ lbs. weight from bobbins up to 12¼" long. New features include redesigned bobbin pockets, skewers, winding drums, cheese arms, and snick plates — and the addition of a tailings sorter, tape breaker, and other optional mechanisms. As always, "Every Knot is a Weaver's Knot."

LARGE-PACKAGE SUPER-SPEED WARPER

The companion machine to the Type "F" Spooler is an improved Super-Speed Warper and Creel. The creel is arranged to take the large 6½ lb. cheeses, the warper will wind larger beams than previous models. In addition, automatic power mechanisms built into the warper enable the doffer to handle the beam from warper to floor or truck with minimum effort.



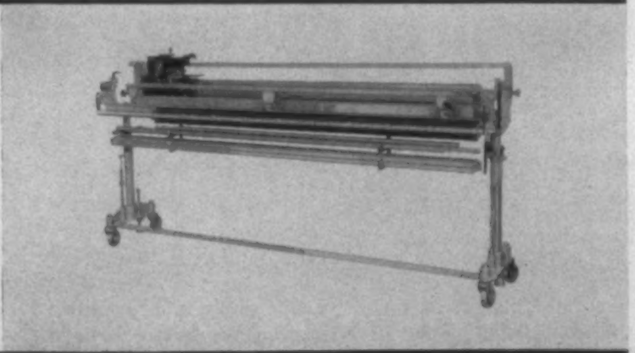


VERSATILE WARP-DRAWING MACHINES

Improved models of the familiar Barber-Colman Warp Drawing Machine now handle an even greater variety of warps, drawing them accurately from flat sheet, one-and-one lease, or double beams. The pattern-controlled mechanism automatically selects the correct thread eyes for each end, in loom combinations of as many as 26 harness, 6 banks of drop wires, and a reed.

PORTABLE WARP-TYING MACHINES

A variety of types and sizes are available to suit all conditions. They will accurately and rapidly tie-in warps of cotton, wool, linen, worsted, mohair, silk, or synthetics. All models operate up to 325 knots a minute, controlled by variable-speed motor drive. Larger stationary models can be furnished where required.



AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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X-Link

PIGMENT BINDER • ANTI-CROCK FINISH

NONWOVEN BINDER

NEW CROSS LINKING VINYL RESIN

X-LINK is news in textiles! It is a cross-linking, self-reactive vinyl resin that makes the addition of thermosetting resins optional. A longer lasting bond to fabrics and fibers results.

FOR WASH 'N WEAR AND OTHER APPAREL OR INDUSTRIAL FINISHES. X-Link is clear and colorless. Builds a fuller, more lasting hand. Improves resistance to water and dry cleaning solvents.

FOR NONWOVENS. X-Link increases flexibility as well as tear and tensile strengths. Gives a pleasing hand and drape.

FOR PIGMENT PRINTING. X-Link improves resistance to crocking, wash fastness and dry cleanability.

X-LINK promises important quality extras for your fabrics. Why not learn more about it? Write or call your nearest National office.

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RESINS
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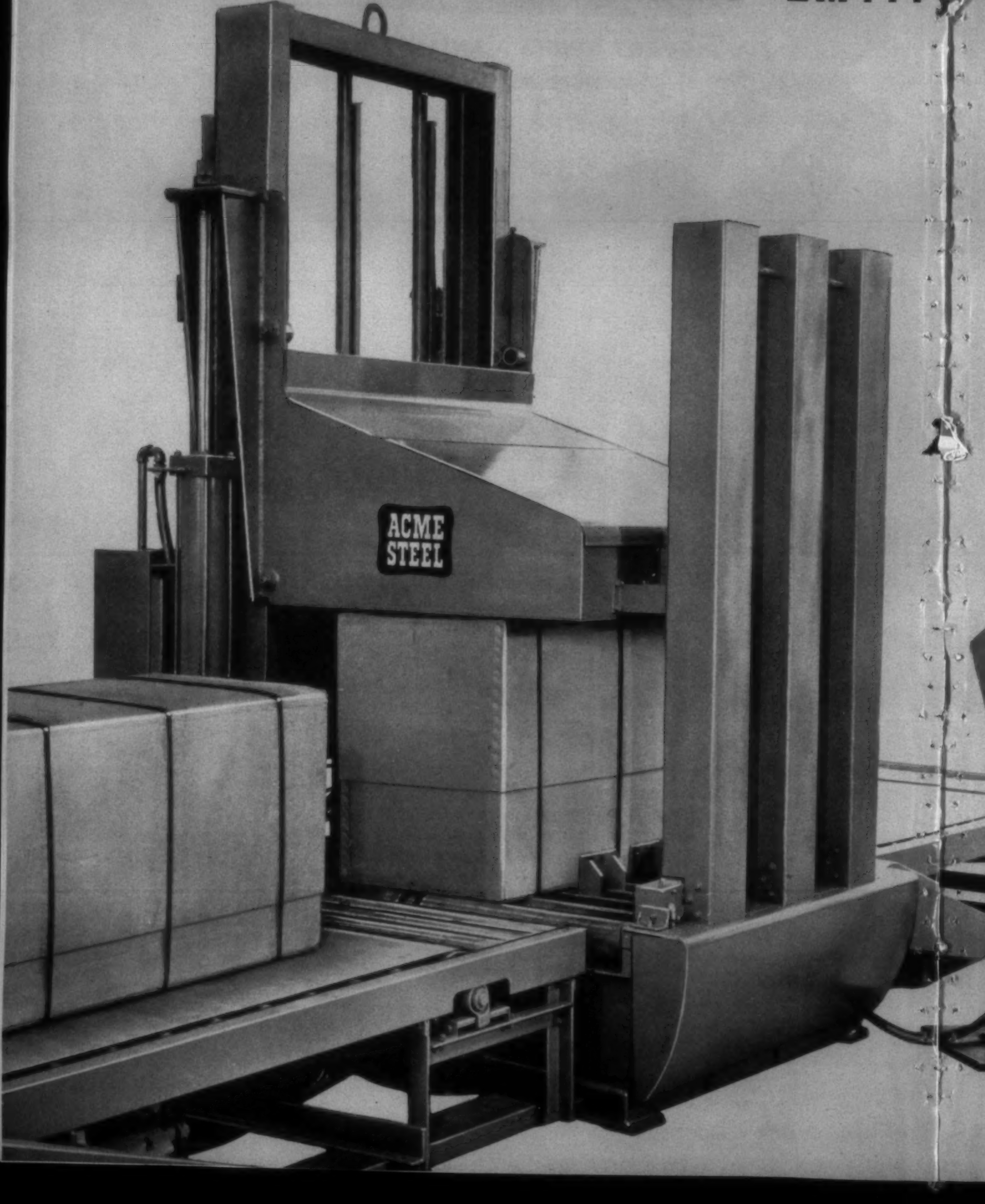
750 Third Avenue, New York 17 • 87 Haynes St., N.W., Atlanta • 53 Fargo St., Boston

CONVEY 'EM...COMPRESS 'EM...



STRAP 'EM BY PUSHBUTTON

Four boxes per minute are a pushover with ACME STEEL'S

NEW F11

Here's the speediest line to the shipping platform any textile packager can have. The new Acme Steel F11 lets you command the *complete* box strapping operation automatically:

CONVEY 'EM into the machine on powered rollers by pushbutton.

COMPRESS 'EM with the exact amount of pressure (up to 10,000 pounds) by another touch of the console.

STRAP 'EM automatically—up to three straps at once. All straps are fed completely around the box, then uniformly tensioned, sealed and cut. Clean, convenient pneumatic power does all the work.

Net results: in one minute you can compress and strap four boxes, apply as many as twelve straps. Each box is secured tight and square for faster, safer handling, more stable stacking. And Acme Steel's "customized" compression allows you to pack in the maximum amount of material without squashing!

The revolutionary F11 strapping mechanism is simplicity itself. It requires no complex (and costly to service) electronic circuits. Simplicity has been achieved to such a degree that the entire mechanism can be replaced with a standby in five minutes!

Have your Acme Idea Man explain in full the newest idea in textile compression strapping. And return the coupon to arrange for a viewing of new movie on the amazing F11 in action.

Put pushbutton console where it's handiest. Example: operator weighs completed box while F11 automatically straps the next. Small box in machine demonstrates versatility of the F11.

ACME STEEL IDEA LEADER IN **STRAPPING**

ACME STEEL COMPANY, Acme Steel Products Division
Dept. TES-71, 135th Street & Perry Avenue, Chicago 27, Illinois

☐ Please send detailed information on the New F11.
☐ Contact me to arrange for showing of new F11 movie.

Name____________________
Title____________________
Firm____________________
Address____________________
City__________ Zone____ State__________

Send us your inquiries on Stainless Steel Equipment

Shown above is a set of warp drying cylinders consisting of four stacks . . . eleven cans per stack . . . produced in our new and modern stainless steel plant. These stainless steel cylinders are 23 inches in diameter with 144-inch face.

Let us have your inquiries on stainless steel cylinders, cooking kettles, storage kettles, stainless steel boxes, and cloth drying ranges.

THE LEADER AROUND THE WORLD

COCKER Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Improve quality–

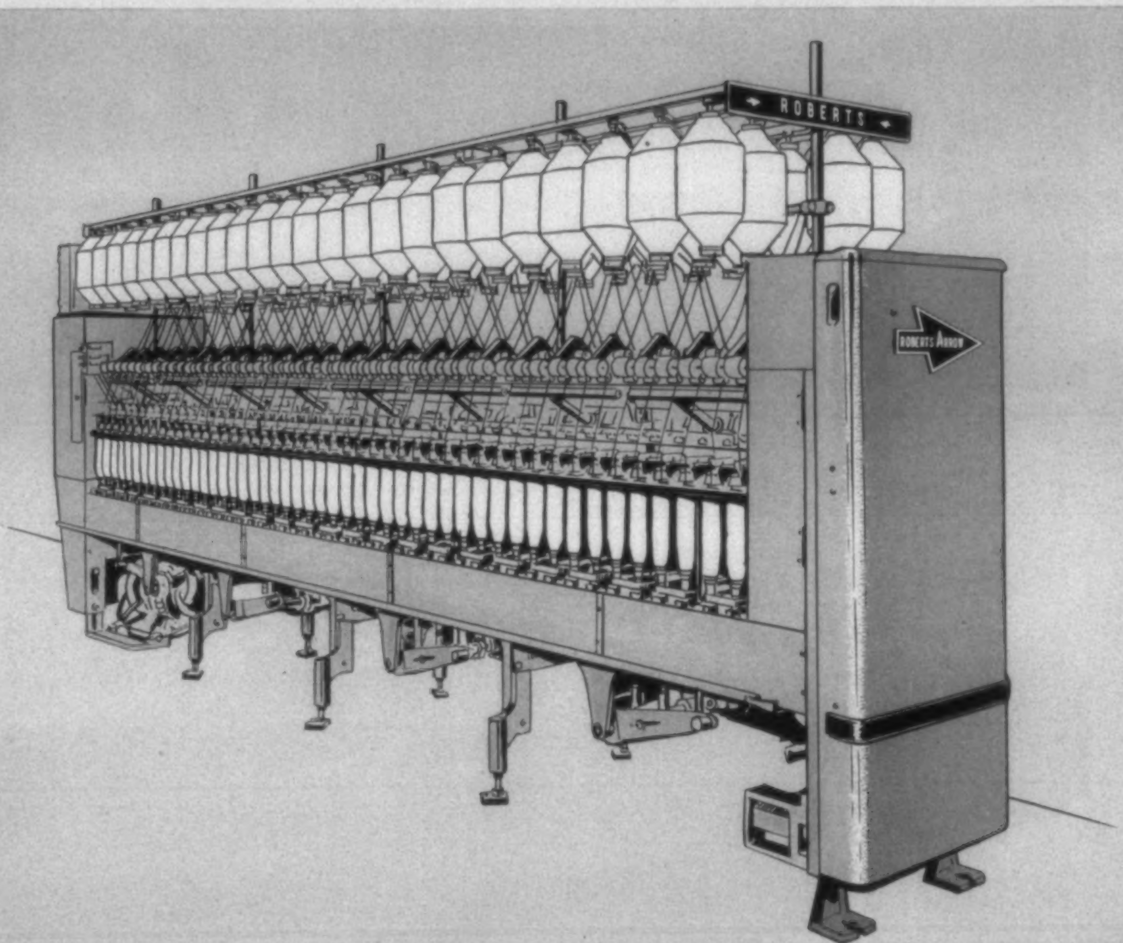
lower handling costs with… **EAGLE**®
easy flow starch

WRITE OR PHONE *Corn Products for expert technical assistance…*
helpful data on these fine products for the Textile Industry:
GLOBE® · EAGLE® · FOXHEAD® · TEN-O-FILM® · CLARO® · CRESCENT® starches · GLOBE® · EXCELLO® dextrines.

CORN PRODUCTS COMPANY INDUSTRIAL DIVISION · 10 East 56 Street, New York 22, N. Y.

Strike up the band! Celanese home furnishings promotions get a big fanfare. It's happened year after year, ever since the introduction of a **unique promotional approach** to decorative fabric selling. The theme for '61 is **SCENE CHANGERS . . . Ready-Mades in Fabrics with Celanese Contemporary Fibers.** Ideas are already brewing for programs for '62, so be on the lookout for their announcement. Be sure you're ready with new weaves and constructions made with Celanese Contemporary Fibers so you can get **your full share** of every future promotion. Remember, too, that Celanese is always interested in working with you on new fabric constructions. Celanese Fibers Company, 522 Fifth Ave., N.Y., 36 (a division of Celanese Corporation of America) Celanese®

Celanese contemporary fibers



ROBERTS ARROW

ADVANCED ENGINEERING DESIGN
ATTRACTIVE LOW PRICE
PRACTICAL MILL OPERATION

➡ **1200 NEW ROBERTS ARROW** Spinning Frames with some 380,000 spindles have been installed in mills since their introduction four years ago; dramatic testimony that Arrow Spinning does the job to mill satisfaction!

➡ **RUGGED, ALL BALL BEARING** and free of gadgetry and frills, new Arrow Spinning has been refined and streamlined, and engineered for peak performance and dependability. Many technological improvements have been incorporated.

➡ **HIGHEST YARN QUALITY!** With new FC Drafting cotton system spinning, Arrow Frames consistently spin stronger, more even yarns. Proper fiber control, gripping and weight assure superior yarn quality.

➡ **INCREASED SPEEDS!** Spindle speeds to 15,000 r.p.m., dynamic balancing of all components, and maximum use of ball bearings provide increased production and economy, with smooth and dependable performance.

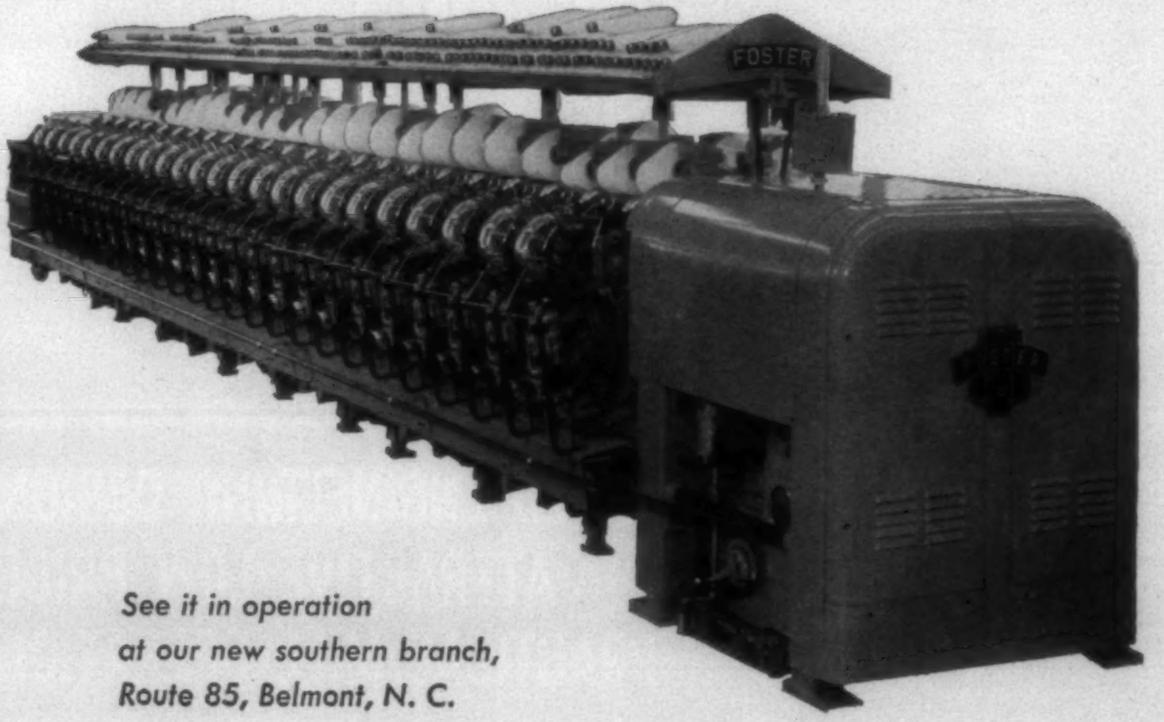
➡ **WIDER VERSATILITY!** Coarse or fine yarns from 2s to 120s count, cotton or synthetics and blends, and a broad range of drafts from 10 to 60 are successfully handled. New Arrow Spinning spins short or long staple cotton, and synthetics from 1$\frac{9}{16}$" to 3". Changes in fiber, yarn number, draft, twist and bobbin build are quickly accomplished.

➡ **REDUCED CLEANING, MAINTENANCE!** Strictly functional, new Arrow Spinning has been engineered for trouble-free operation with reduced cleaning and maintenance. Simplification of components, and fewer parts provide quick, easy cleaning.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

Now Available! FOSTER MODEL 506

- ★ Major Reduction in Operating Costs
- ★ Greatly Improved Yarn and Package Quality



See it in operation
at our new southern branch,
Route 85, Belmont, N. C.

★ **SEEING IS BELIEVING**

See the Foster Model 506 Automatic Cone Winder in operation at our new southern branch, Interstate Defense Highway 85, at Belmont, N. C. and/or arrange to observe machine operating under mill conditions.

FOSTER MACHINE CO.

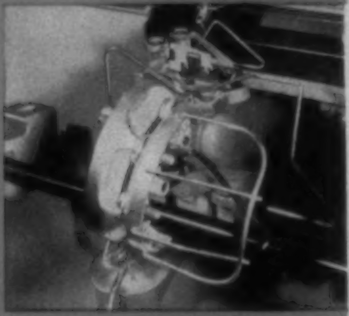
NEW SOUTHERN BRANCH ON ROUTE 85, BELMONT, N. C.

FOSTER MACHINE COMPANY
WESTFIELD, MASSACHUSETTS, U.S.A.

AUTOMATIC YARN WINDER

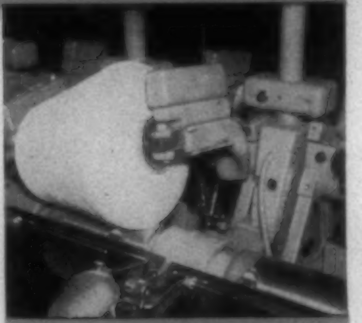
PRACTICAL AUTOMATION Automation of sales yarn winding equipment must be **practical.** By that we mean that the investment required by the mill must not be out of proportion to the return and that savings in winding costs must **not** be achieved **at the expense of yarn and package quality.**

This philosophy has inevitably led to a step-by-step process in the automation of Foster sales yarn winding machines: — first automatic slubbing and cleaning, automatic disposal of empty bobbins and automatic cone size indicator on our manual winders; and now, in addition, an automatic supply bobbin exchanger on the Model 506, plus a greatly improved cone size indicator. Donning and doffing of cones are still done by hand on the Model 506, because automation of these operations would not justify the expense.



ELECTRONIC TENSION & IMPROVED SLUB CATCHER

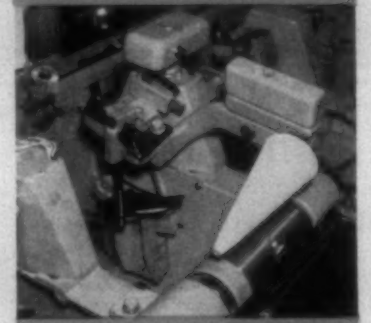
WHY NOT AUTOMATIC KNOT TYING? We have **not** made knot tying automatic on the Model 506, because we have proved, to our own satisfaction, that it can be done **only at the expense of yarn and package quality.** Automatic knot tying permits loose yarn (butterflies), tangles, bobbin rings, crossed ends, uneven package density and rough yarn, and these defects can be discovered only when it is too late. What price savings in winding costs, if they result in a loss at the market place?



FOOLPROOF CONE SIZE INDICATOR

HOW WE SIMPLIFY HAND OPERATIONS Since certain operations in sales yarn winding must still be done by hand, it follows that they should be simplified for maximum efficiency. The donning and doffing of cones involve no problem. They have been as simple and easy as possible for a long time. The other hand operations, however, have presented an opportunity for improvement and we have reduced these operations to 3 simple movements: — 1. dropping the bobbin supply in a chute. 2. tying the knot with the left hand, by means of a high speed mechanical device. 3. instantaneous restart of the spindle with the right hand (see illustration). These 3 motions combined take only ten hundredths of a minute.

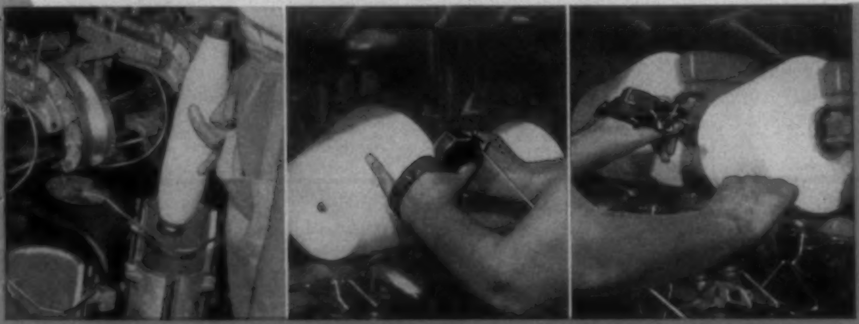
WHAT ABOUT QUALITY? The quality of Model 506 steep taper cones is even better than the quality of Model 102 cones (standard for the sales yarn market for many years). This quality results, not only from operator controlled knot tying, but also from an improved polydyne traverse cam, a larger diameter drive roll, compensating electronic tensions, new extremely efficient slub catchers, fool-proof cone size indicator and oil mist lubrication.



REDESIGNED YOKE & ALUMINUM BALL BEARING CONE HOLDER

WHAT ABOUT SAVINGS? The purpose of automation, of course, is to save money. How much does the Model 506 save? The Model 506 runs at speeds from 900 to 1000 yards per minute — about twice as fast as manual winders — and increases an operator's productivity at least 50%. These figures are not theoretical. They have been substantiated and documented in mill tests, under production conditions.

NOW AVAILABLE Early orders for the Model 506 are already scheduled for shipment starting Sept., 1961. There is still time to order machines for delivery later this year.

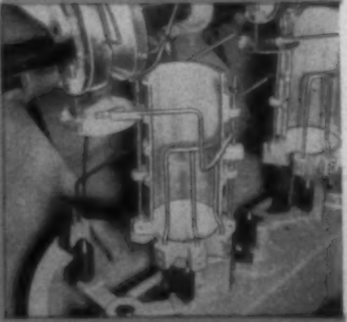


MANUAL OPERATIONS WHICH TAKE ONLY 10/100ths OF A MINUTE

DROPPING BOBBIN IN CHUTE

TYING KNOT WITH HIGH SPEED INSTRUMENT AND TESTING — ALL WITH LEFT HAND

RESTARTING SPINDLE WITH RIGHT HAND



AUTOMATIC SUPPLY BOBBIN EXCHANGER

A Yarn Winder for Every Purpose

SOUTHERN BRANCH—Route 85, Belmont, N. C. • CANADIAN REPRESENTATIVE—Ross Whitehead & Co., Ltd., 2015 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario • EUROPEAN REPRESENTATIVE—Muschamp Textile Machinery (Sales) Limited, Eider Works, Wellington Road, Ashton-under-Lyne, Lancashire, England

At new Foster plant of Alice Manufacturing Co., Easley, S. C., Amco systems give just the right temperature, humidity and room cleanliness.

Amco systems control temperature, humidity, room cleanliness at ALICE Manufacturing Company

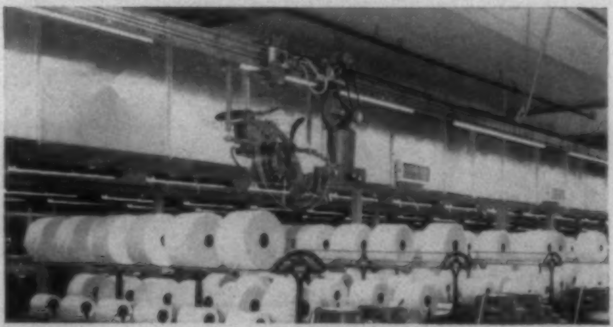
Alice Manufacturing Company is noted for its fine print cloth. One big reason for its success: rigid quality control.

Exact temperature, humidity and room cleanliness control is a must in this manufacturer's quality control set-up. That's why Amco Central Station Air Conditioning, Amco Ceiling Cleaners and Amco Heliclone® Loom Cleaners are on the job!

AMCO AIDS OUTPUT, CUTS WASTE

Here's how Amco-controlled temperature, humidity and room cleanliness help improve quality and boost production. They keep materials in top condition during each processing step to assure stronger, smoother, more uniform fabric. They permit closer machine adjustments, higher machine speeds. They reduce broken fibers, dust, fly . . . greatly decrease the need for cleaning . . . eliminate troublesome static electricity.

You can always rely on Amco to give you dependable advice and expert installation best suited to your needs. Why not learn how Amco can help *your* mill? Contact your nearest Amco representative today.



Combing department at Alice Manufacturing Co. relies on Amco Central Station Air Conditioning and Amco Ceiling Cleaner. Consulting engineers: Campbell and Leppard.

AMCO

Since 1888

Air Conditioning Equipment — Textile Specialties

American Moistening Company, Cleveland, North Carolina
Branches: Atlanta, Ga., Providence, R. I., Toronto, Ont.

GAFAC® RE-610 wetting agent with CHEELOX® B-13 sequestrant

can cut rejects 50% or more in continuous bleaching of cotton goods

Costs no more than conventional systems!

Individually excellent as a wetting agent and a sequestrant, respectively, GAFAC RE-610 and CHEELOX B-13 are more than doubly efficient when used together. Their synergistic effect dramatically improves control over iron and other metallic ions in the caustic-boil and bleaching stages of continuous cotton processing. Mill tests credit the "Gafac-Cheelox" team with reducing rejects owing to iron-speck holes by more than 50% on large runs.

GAFAC RE-610 phosphate ester is a new 100%-active anionic surfactant offering a unique combination of properties in high concentration of alkali: good solubility, chemical stability, and oil- and wax-emulsifying ability—even at the boil. Good rinsability too—though residual amounts in the goods will not interfere with dyeing.

GAFAC RE-610 and other GAFAC surfactants are effective at various other stages in the processing of cellulosic and synthetic-fiber yarns, piece goods, and hosiery. Write for data sheet TA-63 entitled "GAFAC Surfactants in Textile Processing."

ANTARA
gaf

From Research to Reality

ANTARA CHEMICALS
A DIVISION OF
GENERAL ANILINE & FILM CORPORATION
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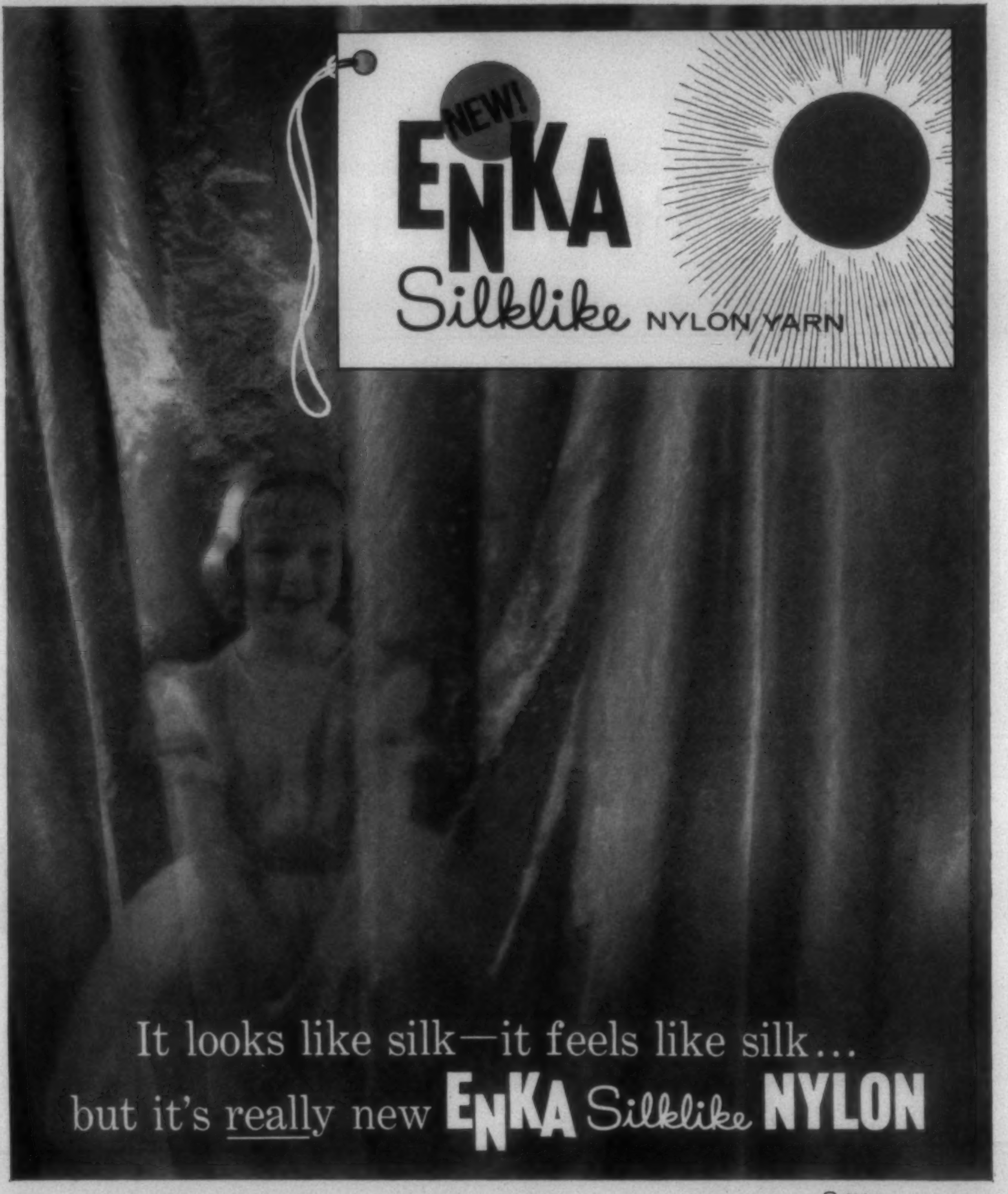
SALES OFFICES: New York • Providence • Philadelphia • Charlotte • Chattanooga • Chicago
Portland, Ore. • San Francisco • Los Angeles. IN CANADA: Chemical Developments of Canada Ltd., Montreal


NEW!
ENKA
Silklike NYLON YARN
It looks like silk—it feels like silk…
but it's really new ENKA Silklike NYLON

You can stump textile experts with this one. For amazing ENKA Silklike nylon yarn creates completely new sheer fabrics that are sheer magic.

Imagine the rich look, the luxurious hand of true silk PLUS the extraordinary benefits of nylon—and you have an inkling of the special kind of fabrics Enka Silklike nylon can produce. Naturally, this new yarn has strength and superb washability. Better yet, it has plenty of bounce and resiliency. Best of all, it dyes beautifully in either brilliant colors or subtle shades.

Its fashion uses? Children's party dresses, Junior and Misses cocktail and evening wear, bridal gowns, negligees are just a few of the markets for Enka Silklike nylon sheers.

And to launch this fabulous new yarn—Enka has planned a thumping promotional campaign introducing consumers to new Enka Silklike nylon in fabrics and fashions. Check on it TODAY at: Enka merchandising in New York, 350 Fifth Ave., PE 6-2300 or the District Sales Office nearest you.

American ENKA Corporation, Enka, N. C. • Producer of nylon • rayon • yarns • fibers
NEW YORK OFFICE: 350 Fifth Ave., New York 1, N. Y. • DISTRICT SALES OFFICES: Greensboro • Providence

Have you heard the latest

RUMORS

about

BUTTERWORTH?

New
Manufacturing Facilities
in the South

An Expanded
Research & Development
Program

New
Synthetic Fiber
Processing Machinery

1960-1970 is the Decade of Progress in Butterworth Machines for the Textile Industry, leading up to our 150th Anniversary in 1970.

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H. W. BUTTERWORTH & SONS CO.
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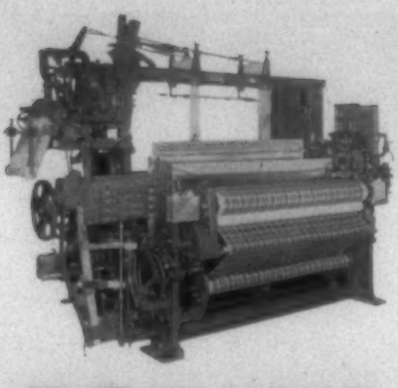
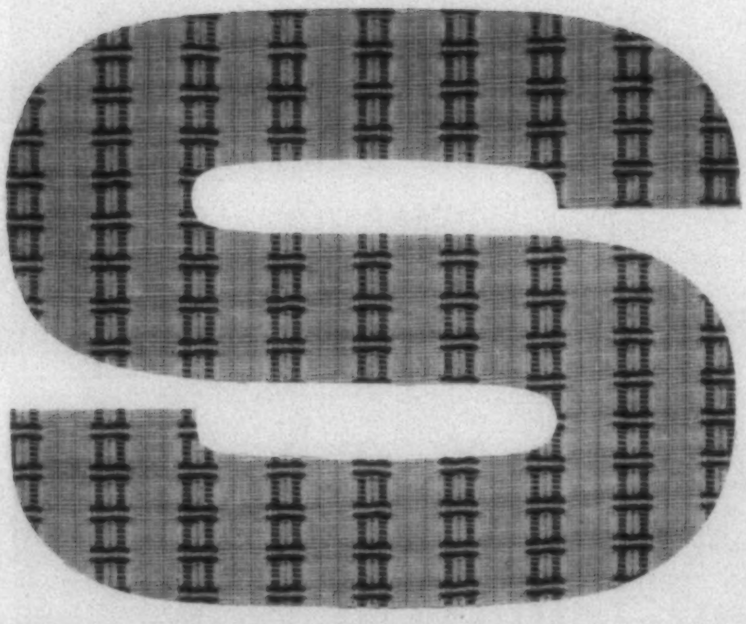
In the South:
Industrial Heat Engineering Co., Greenville, S. C.
In the North:
United States Supply Company, Providence, R. I.



QSEWMT

QUALITY OF CLOTH · SPEED OF LOOM
EFFICIENCY · WEAVER ACCEPTANCE
MAINTENANCE COSTS · TRAINING TIME



SPEED of a loom is more than just picks per minute. Equally important is everything that increases performance and reduces down time due to mechanical failure. More production results from weaving at higher speeds without offsetting loom stoppages.

C & K has built higher speed weaving into the C-7 loom. Double link type binders stabilize shuttle flight, providing easier picking and more accurate checking. The transmitter drive gives a fly wheel effect for steadier operation at high speeds. Exclusive on Crompton & Knowles' new looms, electric protection permits speed without mechanical failure when loom bangs off. Many parts that used to wear, break, or lose adjustment are eliminated.

Push button control permits faster single picks, backups and pick outs. The C-7's electric brain assures faster weaving with increased protection for both loom and operator.

These are but the highlights of the many C-7 features which allow true high speed operation. May we show you some operating comparisons on how to weave more cloth in every hour?

CROMPTON & KNOWLES CORPORATION

WORCESTER, MASSACHUSETTS

C&K

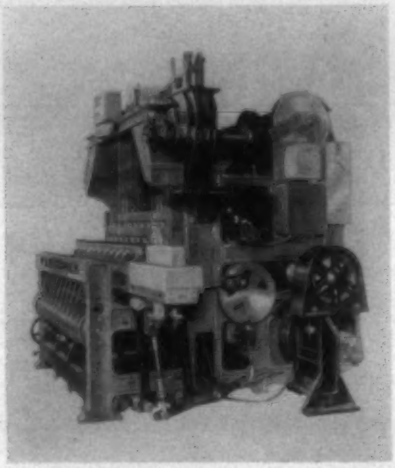
WORLD LEADERSHIP IN AUTOMATIC BOX LOOMS–RESEARCH–ENGINEERING–MANUFACTURE

CHARLOTTE, N. C. / ALLENTOWN, PA. / CROMPTON & KNOWLES JACQUARD & SUPPLY CO. PAWTUCKET, R.I. / CROMPTON & KNOWLES OF CANADA, LTD., MONTREAL, QUEBEC

For The Textile Industry's Use

– NEW MACHINERY, EQUIPMENT AND SUPPLIES –

Narrow Fabric Loom Companion Twister



Fletcher Industries' new narrow fabric loom designed for producing nylon automobile seat belts weaves at the rate of 250 p.p.m.

A new loom designed specifically for the weaving of nylon automobile seat belts has been introduced by Fletcher Industries, Cheltenham, Pa. The new unit is designed to operate at a speed of 250 p.p.m. producing a continuous belt of strong, high quality nylon fabric.

The fully automatic loom features a warp motion and a predetermined pick counter. Warp nylon can be delivered from beams or individual end creels.

A companion twister for twisting warp and filling nylon to specification is also being made available. The large twister bobbin can be mounted on the warping creel or individually on the loom creel. The bobbin sizes are up to 6" diameter and 10" traverse.

(Request Item No. G-1)

Yarn Number Converter

A pocket-sized, slide-rule type calculator which permits easy conversion of common yarn numbers to the new tex universal yarn numbering system has been prepared by the fibers division of American Cyanamid Co., New York City.

Cyanamid's calculator eliminates computation in converting denier numbers, cotton and worsted counts or woolen runs into tex units, a standardized numbering system proposed by the American Society for Testing Materials for all branches of the textile industry.

Regarded as an important simplification for mills using a variety of fibers, the tex system will provide a single basis for measurement of yarns, regardless of the fibers involved. Lack of interchangability in measuring yarn size, fineness, linear density or number has long been a problem for all branches of the industry, the company points out.

Tex numbering measures the mass of the yarn in grams, divided by its length in kilometers. Thus tex units are based on grams per thousand meters, and a tex unit is one-ninth of a denier unit.

Like other leading textile firms, Cyanamid is supporting the efforts of A.S.T.M. Committee D-13 on Textiles to familiarize all segments of the industry with the advantages of tex numbering.

(Request Item No. G-2)

New Zefran Fiber

The textile fibers department of The Dow Chemical Co., New York City, has announced the release of Type 1207 Zefran. Designed specifically to replace Type 1203 in blends with wool, this new fiber is said to have improved dyeing characteristics permitting deeper shades and a broader range of colors.

Mills are now starting to use the improved type in both woven goods and knitted outerwear for the Fall 1962 men's, women's and children's wear markets, Dow reports. The first fabrics containing Type 1207 will appear in men's wear for Spring 1962.

(Request Item No. G-3)

Locking Resin

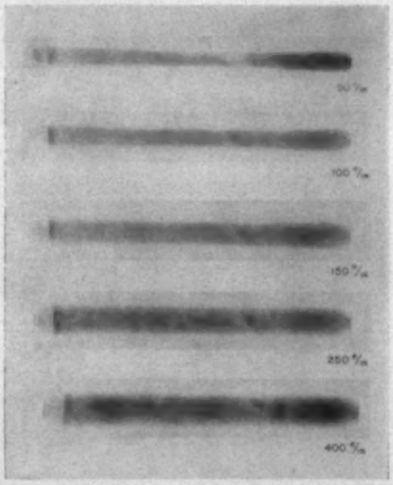
A locking resin designed to securely lock shuttle-spring retaining screws in place has been introduced by the American Sealants Co., Hartford, Conn.

A few drops of the resin, called Loctite, can be applied to tightened screws if it's inconvenient to disassemble the shuttles, reports the company. High penetrating qualities will cause it to seep down over all threads of the screw. Once confined in these small clearances, the chemical is said to harden into a tough bond, but ordinary tools will suffice to remove the screws when desired. Use of the "liquid lock nut" eliminates the need for mechanical locking devices when used against vibration.

Loctite, a new locking resin from American Sealants Co., is said to guarantee the security of shuttle spring retaining screws.

(Request Item No. G-4)

Nip And Crown Roll Tester



Typical samples of impressions made with a variety of roll pressures.

Manhattan Rubber Division of Raybestos-Manhattan Inc. of Passaic, N. J., has introduced what it describes as a totally new approach to testing nips and crowns of rubber covered process rolls. The new development is said to be the most effective and least costly method of assuring high quality runs, and of spotting trouble before it starts.

The test set is made up of 200 feet of a specially developed carbon paper together with 200 feet of white master sheet and is designed to overcome the difficulties experienced with previously

The Button

NEVER COMES OFF

Ideal's New One Piece Lap Stick

The button on this picker lap stick *can't* loosen because it is an integral part of the stick itself. This eliminates costly repairs due to loose buttons and pays dividends in better work and longer service.

Ideal Lap Sticks are made of special alloy steel, induction hardened to increase rigidity. They will carry much heavier laps without bending or warping. All Ideal lap sticks are precision machined to your specifications and weights are controlled to plus or minus ¼ ounce.

Write for Full Information TODAY!

Ideal Machine Shops, Inc.
Bessemer City, N. C.

Continuous Service to Textile Mills Since 1925

developed sets both in the storage of the test material and the finished test records. The completed record may be rolled, folded and stored any place to form a complete case history of service life.

The new unit is said to provide a completely accurate record at pressures of from less than 50 lbs. to more than 1500 lbs. per lineal inch. In addition to the advantages of providing a carbon impression, the Manhattan nip and crown tester can be used for suction rolls to indicate any tendency to cup in the hole area, or to flake, crack or corrugate, the company reports.

A series of these tests taken over a period of time is said to provide a good record of roll condition and indicates in advance of failures the need for regrinding or other roll adjustment.

(Request Item No. G-5)

Water-Soluble Copolymers

The commercial development department of the chemical group of General Aniline & Film Corp., New York City, has announced the availability of the first of a series of vinyl polymers and copolymers, to be sold under the newly established trademark, Gantree. Gantree AN, the first of this series, is now available in semi-commercial quantities in three viscosity ranges: low, medium and high.

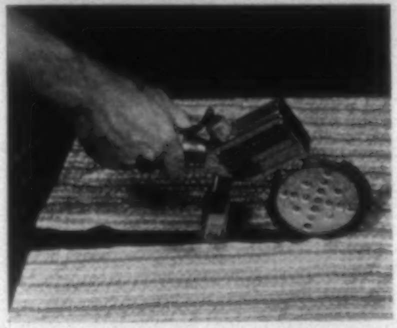
Gantree AN resin, a water-soluble copolymer of methyl vinyl ether and maleic anhydride (PVM/MA) is available as a free-flowing, white powder. The unique properties of this versatile, film-forming copolymer will find application in a variety of fields.

The polymer may be used by itself or in combination with other materials, as a sizing, binder, wet strength improver, dye-receptor, protective colloid and thickening agent in textile manufacture. A useful property of Gantree AN is its ability to be insolubilized by polyhydroxy compounds and polymers. It may also be used as a finishing agent and as a fiber modifier. The use of this copolymer in the spin bath is designed to improve dye receptivity, resilience and water repellancy of viscose rayon yarn. Of special interest for cotton and rayon textiles is a durable finish based on Gantree AN and polyvinyl alcohol. This permanent size provides shrinkage control without loss in breaking strength and, on rayon, reduces seam stoppage. Cellulose acetate fibers impregnated with this chemical exhibit outstanding light fastness and resistance to gas fading.

The adhesion of Gantree AN to nylon fiber is employed to advantage in a nylon warp size consisting of the polymer and a high molecular weight polyethylene glycol. It may also be utilized as a water-soluble carrier and color value improver for oil-based pigment printing pastes and as a binder for vat colors on glass marquisette.

(Request Item No. G-6)

Cutter-Sealer



A new instrument for cutting and at the same time sealing materials made from acetate, rayon, nylon, acetate cotton mixtures, etc., has recently been perfected by Sjostrom Machine Co., Boca Raton, Fla.

This Seal-Cutter is pushed across the material by an operator much the same as a pair of scissors or a rotary knife. A sharp edge of a carboloy-iridium alloy is heated to a suitable temperature to fuse the threads of the material after the cut is made so that there is no raveling or fraying of the threads.

An operator can use the Seal-Cutter to follow the thread of the material or the Seal-Cutter can be pushed along a slot in the table to make a square cut. The average time of cutting across a 40" width material is 2½ seconds, about the same time required by scissors.

The Seal-Cutter weighs 2¼ lbs.; takes 482 watts at 115-volts a.c., and is equipped with asbestos covered cord.

(Request Item No. G-7)

Urethane Foams

The Dayco Corp., Dayton, Ohio, is making available a complete line of urethane foams suitable for laminating with all types of fabrics through fusion, adhesive or quilting techniques. The new foam laminates are designed to make possible an endless combination of fabrics with built-in cushioning, sound and thermal insulation properties in a single package material. The new development can be used for draperies, furniture fabrics, permanent nonskid rug underlays and a host of similar applications.

Dayco offers all three basic types of urethane foams suitable for laminating. These include polyether, polyester and a new open cell type.

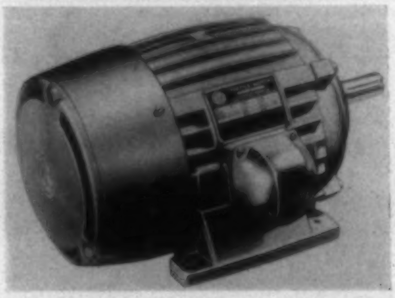
The improved urethane foams, with equal insulation qualities of wool batting yet with only one-fourth the weight, are available in thicknesses from $\frac{1}{16}$" on up; in widths up to 80"; in rolls up to 450 yards with heat seal splices; and in a variety of colors.

The urethane foams resist cleaning fluids, have good tensile strength, are quick drying, non-allergenic,, nontoxic and flame retardant. They are odorless and resist bacteria, fungus and mildew, Dayco reports.

Urethane is made by combining liquid chemicals which foam up to 30 times the original volume. By merely varying the formulations the material can be made soft and flexible or as hard as ivory. The material can also be poured as a solid, non-foaming elastomer which in its flexible form resembles rubber.

(Request Item No. G-8)

Totally-Enclosed Motor



A new totally-enclosed motor designed for protection against lint and other airborne particles in the textile industry has been developed by U. S. Electrical Motors Inc., Los Angeles, Calif. The new motors, designated Type JG, are available in ratings from 1 to 50 h.p., speeds 720 to 1,800 r.p.m.

Besides preventing the entrance of lint into the motor, U. S. Motors reports that the design also minimizes the build-up of lint on external surfaces. This is accomplished by means of large aluminum fan blades which provide maximum air circulation around the motor by means of large, smooth air vents that encircle the case. The ribbed surface of the new textile motor is designed to dissipate heat 50% faster than smooth surfaced motors.

Intake ports are contoured to minimize air restrictions and permit low intake velocity, while preventing turbulence. All internal castings are smoothly contoured, while fan guard and bracket bolts are recessed to prevent lint from snagging as air passes over the motor.

U. S. Lubriflush lubrication is utilized via grease fill and drain passage drilled through the motor castings to avoid extruding pipe extensions that would impede air flow and catch lint.

The Type JG motor is available in 3 or 2-phase, 60 cycles, with operating voltages of 220/440 or 550 volts. It is rated for a 55° C. temperature rise.

(Request Item No. G-9)

Solid State Regulators

A complete line of solid state regulators and exciters for variable speed drives has been introduced by Reliance Electric & Engineering Co. of Cleveland, Ohio.

Reliance reports that these new solid state devices, using silicon controlled rectifiers and diodes in place of tubes, achieve precise motor control, 0.1% regulation at base speed, with response times up to twice as fast as tube-type regulators.

The heart of the system is the new Cardpak module, a complete pre-engineered control circuit, to amplify feedback signals. Transistors, capacitors and resistors are mounted on printed circuits. Each drive control system can be tailored to a specific job.

The silicon rectifiers, mounted on copper plates for heat radiation, operate over a wide range of in-plant temperatures. No special air-conditioning is needed. The complete regulator panel can be checked for start-up and trouble shooting by use of an optional test fixture mounted on the panel.

These new regulators are available in 1 to 350 h.p. and are offered complete with Super "T" d.c. motors and various types of operator's stations.

(Request Item No. G-10)

Silicone Water Repellent

The Arkansas Co. of Newark, N. J., has announced the development of a new silicone finish for cotton which they are offering under the tradename, Hydro-Pruf C. This new type of silicone finish has been tested in mill operation, producing highly satisfactory results.

Cotton fabrics treated with Hydro-Pruf C in combination with a special catalyst are durably water repellent and

Ideal
Picker Lap Pins

INDUCTION HARDENED for Longer Life

Ideal's induction hardening process is far superior to methods ordinarily used in picker lap pins. When applied only on the journals it materially increases bearing life. When applied over the entire surface of the pin, it also eliminates the nicks and burrs otherwise caused by normal use.

Ideal picker lap pins are made with either smooth or fluted surfaces. Let us give you full information on these improved lap pins.

Ideal Machine Shops, Inc.
Bessemer City, N. C.

Continuous Service to Textile Mills Since 1925

will stand many washings at the boil in the presence of alkaline extenders commonly used by commercial laundries. Similar to most silicone finishes, it is durable to many dry cleanings. In addition, Hydro-Pruf C produces a finer hand on cotton fabrics and a much improved drape, reports the company.

The finish possesses a high degree of stability and does not break down on continuous operation and will not spot the fabric or oil out on the rolls when applied.

Hydro-Pruf C is compatible with most thermosetting resins and color fixatives and requires no extra operation or pre-washes in its application to cotton fabrics, the company reports. A cotton fabric dyed with Naphthol colors may be made durably water repellent without shade change with the new finish.

(Request Item No. G-11)

Film And Fabric Welder

A new ultrasonic technique enabling cold bonding, threadless stitching, sealing or welding of plastic films and synthetic woven or nonwoven fabrics has been developed by Ultrasonic Industries Inc., Plainview, L. I., N. Y.

Called Sewnar, the device is relatively simple. Using only high frequency sound waves above the human audibility range, the Sewnar is able to splice or seal easily. No heat or dielectric currents are used and there is no distortion or chemical change in the material being processed. Positively air-tight, vapor-tight joints can be obtained, Ultrasonic reports.

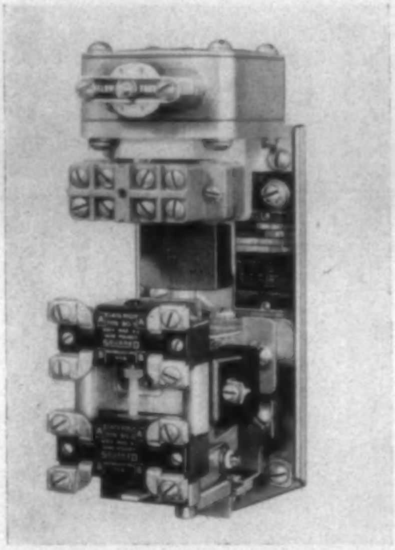
The machine consists basically of an ultrasonic oscillator which feeds 40,000 cycles per second current to a special transducer resembling a king-size ball point pen. The transducer focuses the ultrasonic energy at its rounded tip which is guided gently across the material being sealed. The high frequency sound waves cause a high strength interlocking of molecules on the surface of the material so exposed.

No experience is necessary to operate the device which can be operated by hand or mounted in a fixture for automation sealing. The unit can even be mounted in a sewing machine, substituting for needle and thread. The plastic material is then stitched without thread by "silent sound."

The Sewnar is effective with the following plastics: Dacron polyester, nylon, Acrilan, Saran, and a broad range of vinyl, polyethylene, polypropylene and other synthetics.

(Request Item No. G-12)

Timing Relays



The Square D Co., Chicago, Ill., is making its Class 9050 Types B and C timing relays available with a new 2-pole snap switch which doubles the number of contacts and mounts in the same space as a single-pole timer. The new device is designed for applications where it would normally be necessary to install an extra timer or relay for control of additional circuits.

The new timing relay can also be furnished with one or two single-pole, double-throw instantaneous snap switch interlocks, and can be converted from on-delay to off-delay and vice versa. Timing is adjustable from 0.2 seconds to 3 minutes, and contacts are totally enclosed to avoid dust and dirt problems. The timers are available for both a.c. and d.c. operation in a wide variety of enclosures.

(Request Item No. G-13)

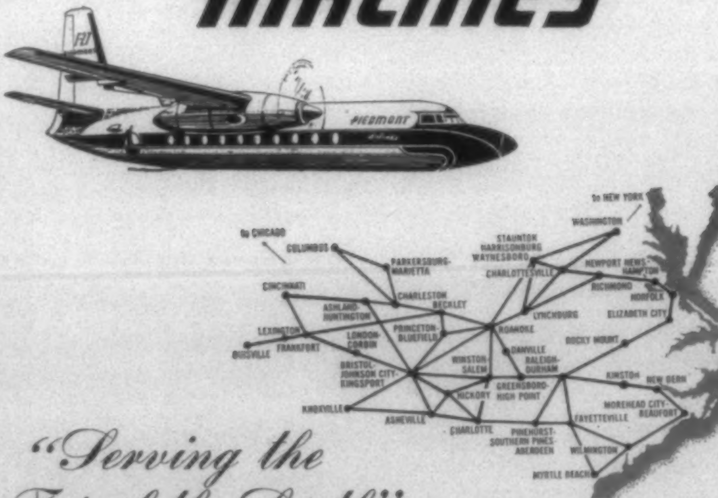
Cross-Linking Resin Latex

A self-crosslinking resin latex designed to offer unique advantages in nonwoven fabrics and textile finishing applications has been developed by the resin division of National Starch & Chemical Corp., New York City.

Introduced as X-Link 2833, this new vinyl-acrylic copolymer dispersion is capable of crosslinking without the addition of thermosetting resins to form unusually strong and flexible films hav-

for more traveling pleasure

FLY PIEDMONT AIRLINES



"Serving the Top of the South"

ing exceptional resistance to water, solvents and creep, reports the company. Use of the latex has been found to eliminate problems of stability, odor, compatibility and high curing temperatures usually associated with combinations of thermosetting and thermoplastic resins.

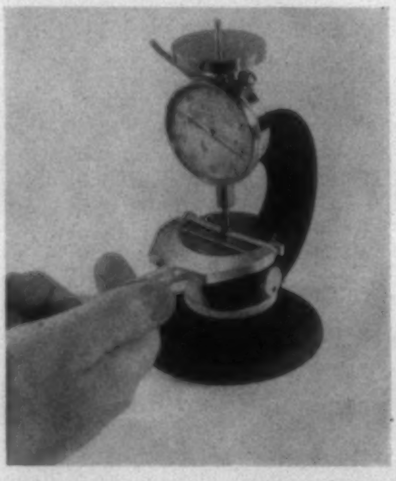
When cured, which is normally achieved at room temperatures, this reactive latex is said to impart desirable properties of flexibility and hand in saturated materials. Ordinarily, no compounding or formulating is necessary to crosslink the latex.

As a binder for nonwoven fabrics X-Link 2833 provides strength and softness. It also has excellent heat and light stability, resiliency, good tear and tensile strength, washfastness and dry-cleanability.

Alone or in combinations with such finishing agents as softeners or wash-and-wear resins, the latex produces extremely durable fabric finishes that remain after many washings or dry cleanings. These finishes have been found to improve the fullness of hand and drape and to increase abrasion resistance, tensile and tear strength, reports National Starch.

(Request Item No. G-14)

Yarn Thickness Gauge



A compact, new test accessory designed to speed and simplify measurement of yarn thickness in accordance with A.S.T.M. Method of Test D885-59T, Section 23, is being offered by Scott Testers Inc., Providence, R. I.

Called the Cordinator, the new device provides a lightweight (aluminum), easy-to-use mounting upon which four strands of yarn are wrapped and placed side by side under the pressure foot of a standard thickness gage, thus enabling the operator to make a positive

IT MATTERS LITTLE

HOW SOME TUBES ARE MADE

...but Quality is a Factor in Most Cases

One of the least expensive components of rolled products in the paper and textile fields—tubes and cores—naturally gets the least attention.

Yet the precision and quality of the tubes or cores vitally affect the end product, in sales and repeat orders.

TPP Tubes and Cores are precision-made at five of our own modern plants. Raw materials are drawn from an unlimited number of sources to meet exacting requirements. Even the glue is aged with the care of fine wine to assure adhesive characteristics to meet TPP standards.

Couple TPP quality with unequalled service from 5 plants by our own trucks and you have the best buy of all in tubes and cores.

TPP TEXTILE PAPER PRODUCTS inc.

Specialists in tubes and cores for textile and paper industries

CEDARTOWN, GEORGIA Home Office and Plant
Other Plants In: Carlyle, Illinois — Crossett, Arkansas
Jacksonville, Florida — Mobile, Alabama

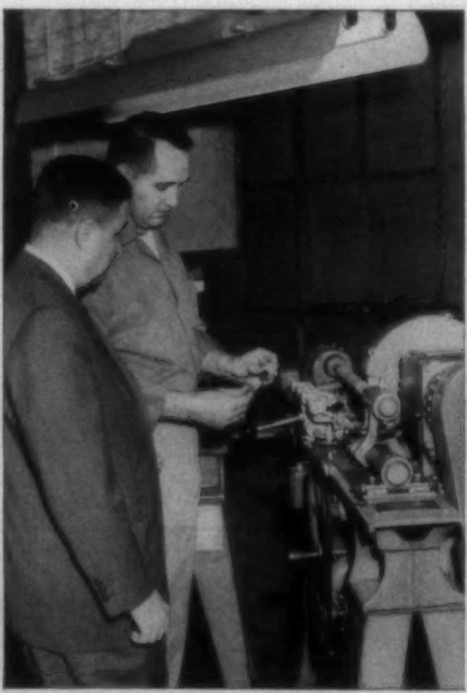
Spin top-quality yarn with Armstrong Accotex roll covers and aprons

Smoothness . . . uniformity . . . strength: these are the marks of quality yarn. And they depend, to a large extent, on the performance of your spinning cots and aprons.

To keep yarn quality high, hundreds of mill men specify Armstrong Accotex cots and aprons. They know that Accotex products provide the smooth drafting action and superior yarn control so necessary to production of quality yarn.

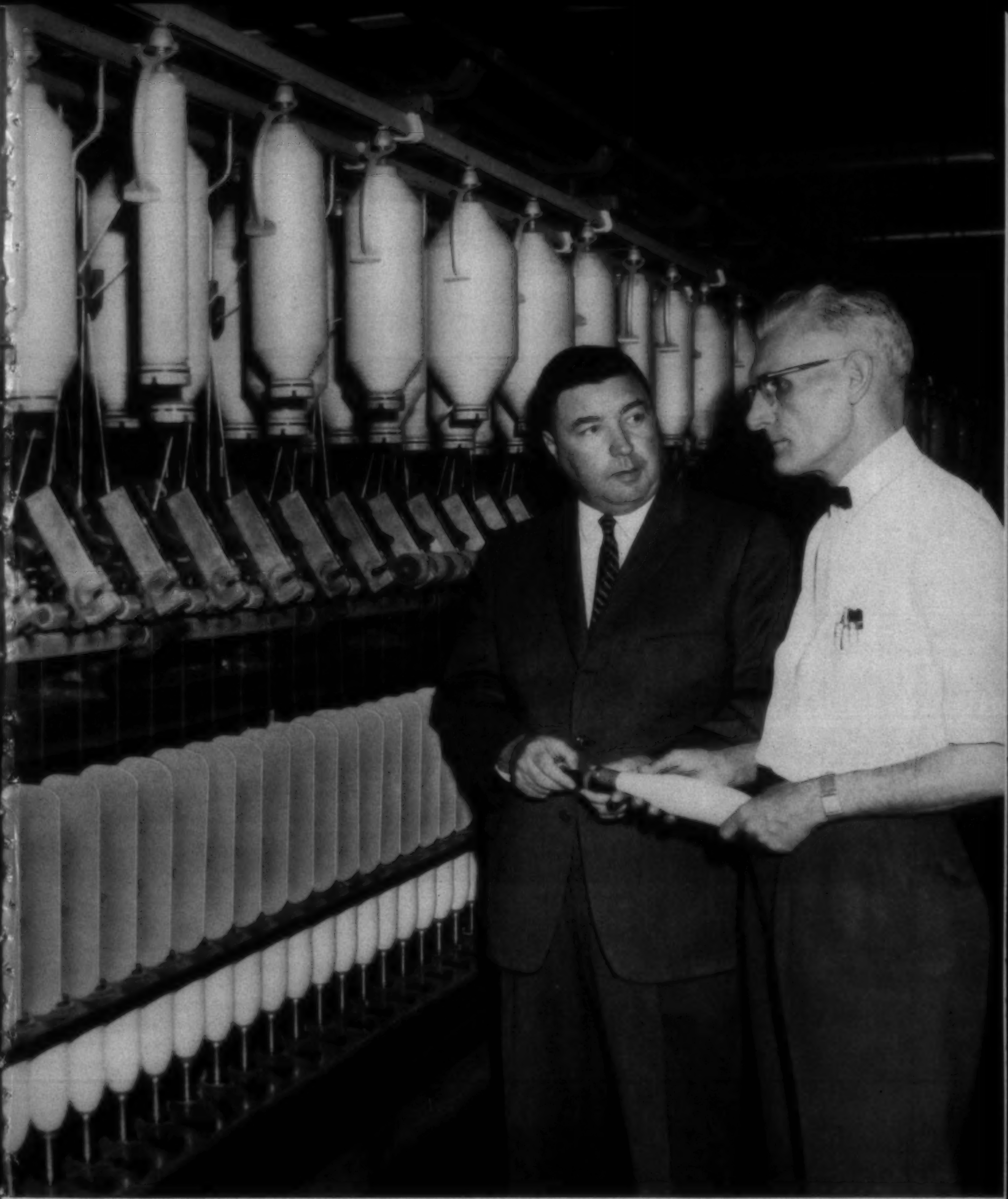
And these men also know that their Armstrong representative can make dependable suggestions on practically any roll covering and apron problem. Armstrong Cork Company, Industrial Division, 6407 Davis Avenue, Lancaster, Pennsylvania.

Taylor Weaver and Archie Cox, Overseer of Carding, checking the Accotex J-490 covers used on this drawing frame.



Jack Radford is in charge of the roll shop. Here he discusses operation of this Armstrong Model "J" buffing machine with Weaver.

L. T. Embler, Superintendent of this Abney Mills plant, discusses spinning characteristics of a new Accotex roll covering with Weaver.



H. C. Thrasher, right, Overseer of Spinning at the Abney Mills plant in Anderson, South Carolina, discusses performance of this new spinning frame with Armstrong representative Taylor H. Weaver. Frame is equipped with Accotex NO-728 front line cots, NC-729 cots on the back line, and NO-7075 aprons.

Armstrong ACCOTEX COTS AND APRONS

EFFECTIVE LUBRICATION in spite of moisture

LUBRIPLATE Lubricants provide superior lubrication even in the presence of moisture and steam. They permit high speed operation, have exceedingly long life and do not break down. There is a LUBRIPLATE Lubricant, ranging from the lightest oils to the heaviest greases, to meet every requirement of the textile industry.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose . . . LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

and rapid diameter evaluation of the yarn. The Cordinator accessory will be manufactured by Scott Testers (Southern) Inc. of Spartanburg, S. C.

(Request Item No. G-15)

Air-Drying Water Proofing

Two new durable air-drying silicone water repellents for use on textiles have been put on the market by the silicone products department of General Electric, Waterford, N. Y.

The first, SS-4053, is for industrial application and is designed for use where a material containing a non-inflammable solvent is needed. SS-4029 is suggested for consumer type applications.

As a water repellent for textiles, they are recommended for canvas awnings, bags and baggings, tents, tarpaulins, auto convertible tops, sportswear, rainwear and other outerwear.

Materials treated with SS-4029 and SS-4053 feature unimpaired air circulation, improved low temperature flexibility, increased resistance to oils and greases, increased resistance to alkali salts, water-borne spot and stain resistance and rapid air drying, reports the company.

Both materials can be applied by spraying, brushing, swabbing, dip coating and roll coating without provision for heat after application, except if desired to flash off solvent. SS-4029 is 50% mineral spirits while SS-4053 is 50% perchloroethylene.

A third product, SS-4024, is also available for industrial applications where a non-inflammable solvent is not required.

(Request Item No. G-16)

For the Mill Bookshelf

Sapphire Thread Guides

A new technical bulletin (Form 1498) on the use of synthetic sapphire in the textile industry is available from Linde Co., division of Union Carbide Corp., New York City.

Sapphire's unique combination of properties—hardness, smoothness, wear resistance, strength, stability at high temperatures and chemical inertness—and the advantages these properties afford in thread handling and other wear applications within the textile industry are discussed. These advantages include longer thread guide life even under extreme processing conditions, greater thread protection since even a worn sapphire guide offers a smooth surface, low cost and versatility.

(Request Item No. G-17)

Steel Strapping Tools

An illustrated, 16-page bulletin (AD-300) is available from Acme Steel Co. of Chicago, Ill., describing the firm's line of powered steel strapping tools and accessories.

Complemented by more than 35 application photos, the 2-color brochure illustrates profitable product use. It features concise product data and specifications on such Acme Steel powered tools as steelstrappers, stretchers, sealers, tool mounts, strap feed assemblies and strapping accessories. Advantages of various models of these tools with their available power selections are also explained.

(Request Item No. G-18)

Wetting Agents

A comprehensive line of wetting agents for diversified industrial uses is described in a new booklet (ISP-45) published by Nopco Chemical Co., Newark, N. J.

The brochure suggests a number of applications for wetting agents in the field of textiles. The publication also contains accurate Draves wetting times of the various Nopco wetting agents listed, with additional data on chemical and physical properties and general recommendations for use.

Some of the described have been developed for their wetting ability alone, and are employed when the end use involves rapid contact, spreading or penetrating effects. Other products have been designed with such auxiliary properties as lubricity, softening, easy rinsability, foaming or lack of foaming, plus other considerations.

The products described in the book are the most popular types currently being used in the textile industry. Variations of each type are also available for particular cases where the listed products are not suitable.

The agents are used for carbonizing, kier boiling, dyeing, pasting dyestuffs, printing pastes, compressive shrinkage, sizing, de-sizing, bleaching, fire prevention and fabric impregnation.

(Request Item No. G-19)

Nylon Polymer Core Belting

A new 12-page illustrated engineering catalog from Extremultus Inc., Englewood, N. J., describes the firm's flexible, oriented nylon-polymer core belting. The booklet features comprehensive engineering and application data, including graphs to determine proper type belt, as well as charts for belt width and tension.

(Request Item No. G-20)

Fabric Expanders

Mount Hope Machinery Co., Taunton, Mass., has released new technical literature on its Webmasters and Vari-Bow Expanders, which are designed to automatically control the width of fabrics and to eliminate damaged selvages. A technical sheet, No. 6 in a series, tells how the units work and what can be accomplished with them. It reports that Mount Hope's machinery eliminates the tenterette, which can cause seconds by torn edges. This problem has been solved, according to the company. The expander rolls are placed ahead of the Webmaster and are used to give initial stretch to the fabric so that the Webmaster can give the final width control. The Vari-Bow is adjusted only when changing type of fabric or a run of fabric has been pulled down excessively.

The Webmaster Model F-3 consists of two flexible axle free-wheeling expanders that are bowed to exact spreading requirements by air motors controlled by selvage fingers. The selvage fingers are adjusted by the operator to the width within the capacity of the machine. A brochure describing one of Mount Hope's paper mill installations has also been published by the company.

(Request Item No. G-21)

600-Volt Switchgear

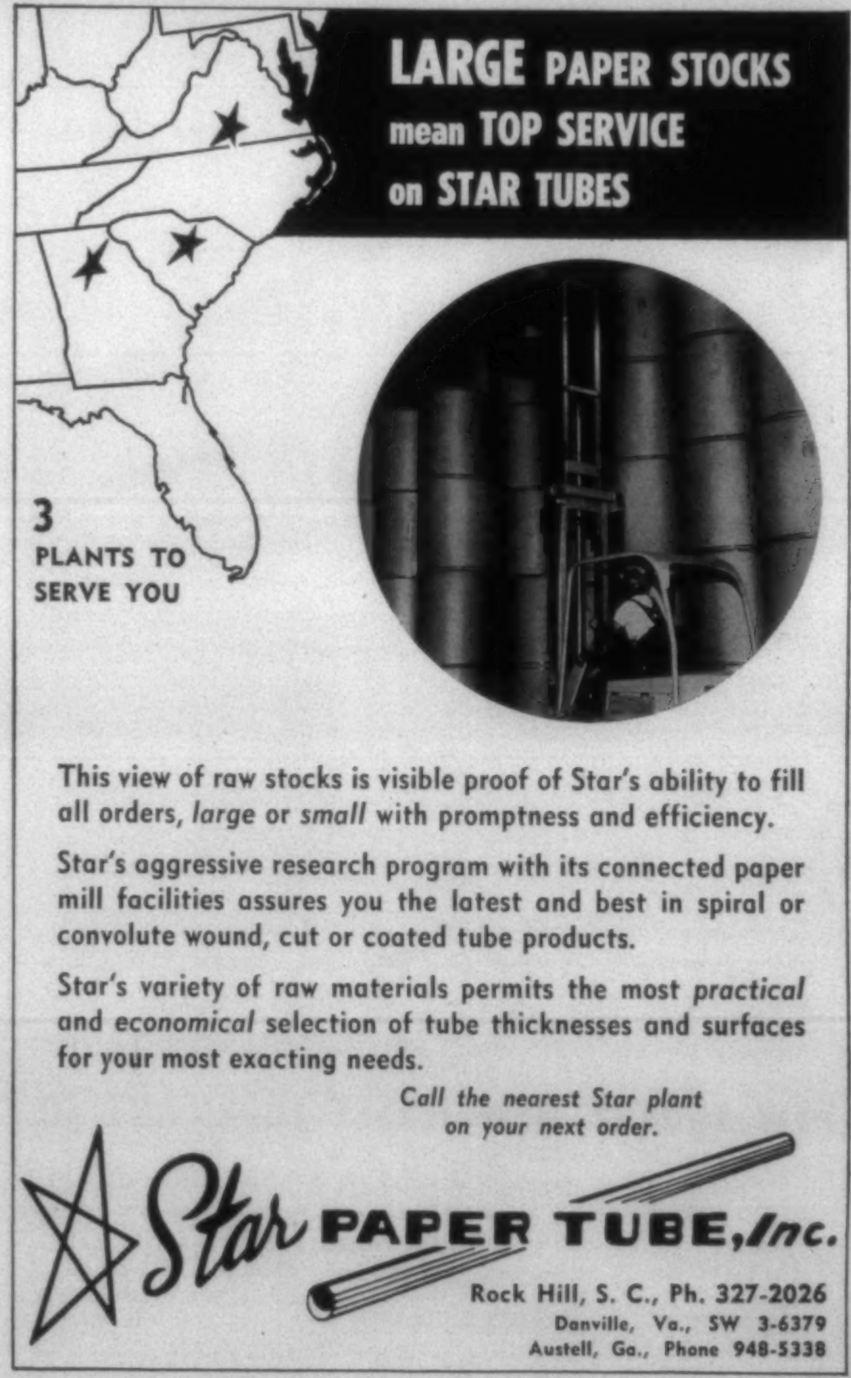
Advanced design features of a 600-volt switchgear with K-Line circuit breakers are described in a new 2-color bulletin published by I-T-E Circuit Breaker Co., Philadelphia, Pa.

The 20-page bulletin, No. 3200-1A, is designed to provide comprehensive information on low voltage power circuit breakers and switchboards, ranging in unit ratings from 225 to 4,000 amps.

Some of the advantages detailed for the stored-energy K-Line breakers are: quick-make manual closing for safety; less upkeep and longer contact life; easy pulldown handle operation; expanded trip calibration; and increased accessibility of trip units. Additional features of the switchgear—closed-door drawout, utilized assembly, new bus arrangement and easy maintenance—are also covered.

Other pages are devoted to application tables complete with breaker ratings, control-power requirements and ranges of overcurrent trip devices.

Data that aids in selection of proper breakers for low voltage drawout switchgear applications is also included. The bulletin also includes a typical switchgear assembly layout drawing, table of dimensions and a sample specification page that is color-coded for customer convenience. A separate 3-page section explains short circuit currents in low volt-



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age systems through graphs, charts and tables.

(Request Item No. G-22)

XL Rayon For Belts

A new technical service bulletin, "XL In Belting Fabrics," issued by American Viscose Corp., New York City, provides full information, complete with charts, on Avisto XL rayon used for industrial applications in conveyor and transmission belting fabrics.

Pointing out the functional and economic advantages of XL Rayon in engineered fabrics, this bulletin stressed: (1) additional conditioned tensile without added bulk; (2) good wet strength; (3) greater fatigue life; (4) good adhesion, without pre-dipping; (5) excellent flex characteristics; and (6) resilience.

The single and plied yarn properties of XL rayon are compared with cotton, and the twist multiples for maximum strength of XL yarns are given. Comparative physical properties of rayon and cotton belting fabrics are provided, including weight; warp and filling crimp; grab strengths; as well as conditioned and wet strength factors. Minimum tensile specifications and fatigue results for both XL rayon and cotton constructions are given and compared. Work efficiency, illustrated by stress-strain diagrams and conclusions summarizing the features of Avisco XL rayon are also included.

(Request Item No. G-23)

Yarn Inspection Units

A new 6-page bulletin, issued by Lindly & Co., Mineola, L. I., N. Y., reviews the various types of yarn defects encountered in the warping of multi-filament synthetic fiber yarns (such as small strip-backs, large strip-backs or fluff balls, long strip-backs, single filament loops, series of filament loops, long single filament loops of low amplitude, knots wth short tails, knots with long tails, broken ends and ends out) and specifies the type of Lindly equipment suitable for detecting, counting and/or stopping the warper for defect removal. Fifteen different models of the Lindly Series 1000 fully transistorized Ultra Yarn Inspector are included in the specifications. The inspector consists essentially of a control unit and an electronic detecting head.

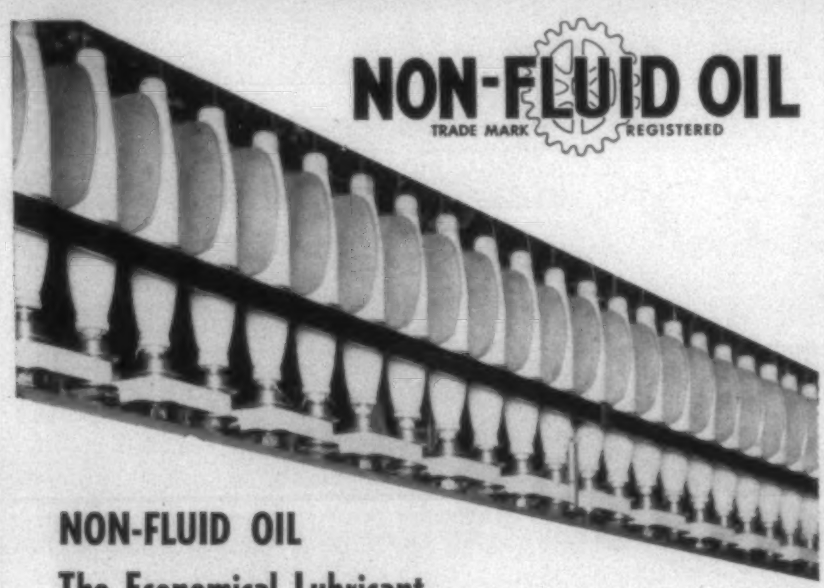
(Request Item No. G-24)

Printing Equipment

A new, 72-page "Product Guide of Screen Process Equipment" is available from Colonial Process Supply Co., New York City. Printed in two colors and fully illustrated, the new catalog is designed to acquaint the textile printer with the applications of screen colors.

The new guide devotes 36 of its 72 pages to a coverage of over 18 different ink lines which are suitable for printing on fabrics such as denim, cotton, rayon, linen, etc. Contents in this section also includes detailed application data along with suggested end uses for each of the inks. In addition, the publication illustrates and describes in detail other screen printing supplies and equipment.

A copy of the products guide can be obtained by request on a company letterhead from Colonial Process Supply Co., 122 West 22nd Street, New York 11, N. Y.



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Serving The Textile Industry

Selta Corp. To Act As Agent For Hunter's Baling Presses

James Hunter Inc., Mauldin, S. C., has named the Selta Corp. of Charlotte, N. C., as sales representative for the Beaty hydraulic presses. The Beaty hydraulic press line includes a number of standard models, with capacities from 50 to 110 tons, for baling waste, cloth and other materials.

The presses are built and serviced exclusively by James Hunter technicians. Hunter also offers engineering facilities for designing equipment on a custom basis, for special applications or to meet individual plant or processing limitations. This service will be available to all Selta customers.

Nopco Chemical Purchases Six Midwestern Foam Firms

Nopco Chemical Co., Newark, N. J., has acquired six Midwest foam companies from the D & W Clark Corp., Chicago, Ill. The six companies are all engaged in the fabrication and distribution of urethane fiber products. They are: Clark Foam Products Co., an Illinois corporation; Clark Products Inc., an Indiana corporation; Clark Products Inc., a Nebraska corporation; Clark Foam Rubber & Fabrics Inc., a Colorado corporation; Clark Foam Rubber Inc., a Minnesota corporation; and Clark Fibre Products Inc., an Illinois corporation.

The combined sales of the six Clark companies for the 12 months ended March 31, 1961, were in excess of $5.8 million. Nopco sales for the year ended December 31, 1960, were $39.8 million.

Nopco acquired the six firms for 30,000 shares of its common stock. They will all continue to sell and distribute through regular offices and warehouses, with no change in personnel.

Anderson, Clayton Opens Greenville, S. C., Office

Anderson, Clayton & Co., Houston, Tex., has opened a domestic cotton sales division in Greenville, S. C. Henry Stevens of Greenville has been named manager of the division and will be responsible for all cotton sales of the company to domestic and Canadian mills with the exception of the New England area, which will continue to be under the Boston, Mass., office.

Edda And Abney End Maxbo Shuttleless Loom Contract

Edda International Corp., Greenville, S. C., and Abney Mills, Greenwood, S. C., have terminated the contract whereby the Southeastern Loom & Machine Works Division of Abney was to manufacture Edda's Maxbo shuttleless loom. A joint statement issued by the firms said that the contract was terminated because Southeastern had neither the technical "wherewithal" or physical facilities to produce the looms as rapidly and in the quantities that Edda felt the trade would require.

WITH THE OPENING OF THIS PLANT in Englewood, N. J., Extremultus Inc. will begin the production of its power transmission belting in this country. Since 1956 the company has imported its belting from West Germany. The new plant has tripled the capacity of the former plant in Long Island City, N. Y.

Mount Hope To Discontinue Henderson, N. C., Operation

Mount Hope Finishing Co., Durham, N. C., will discontinue its Henderson, N. C., operation in the very near future and move them to its plant at Butner, N. C. The Henderson operation was opened four years ago and presently employs about 100 people. Both the Henderson and the Butner plant have been on a short-time basis since the first of the year.

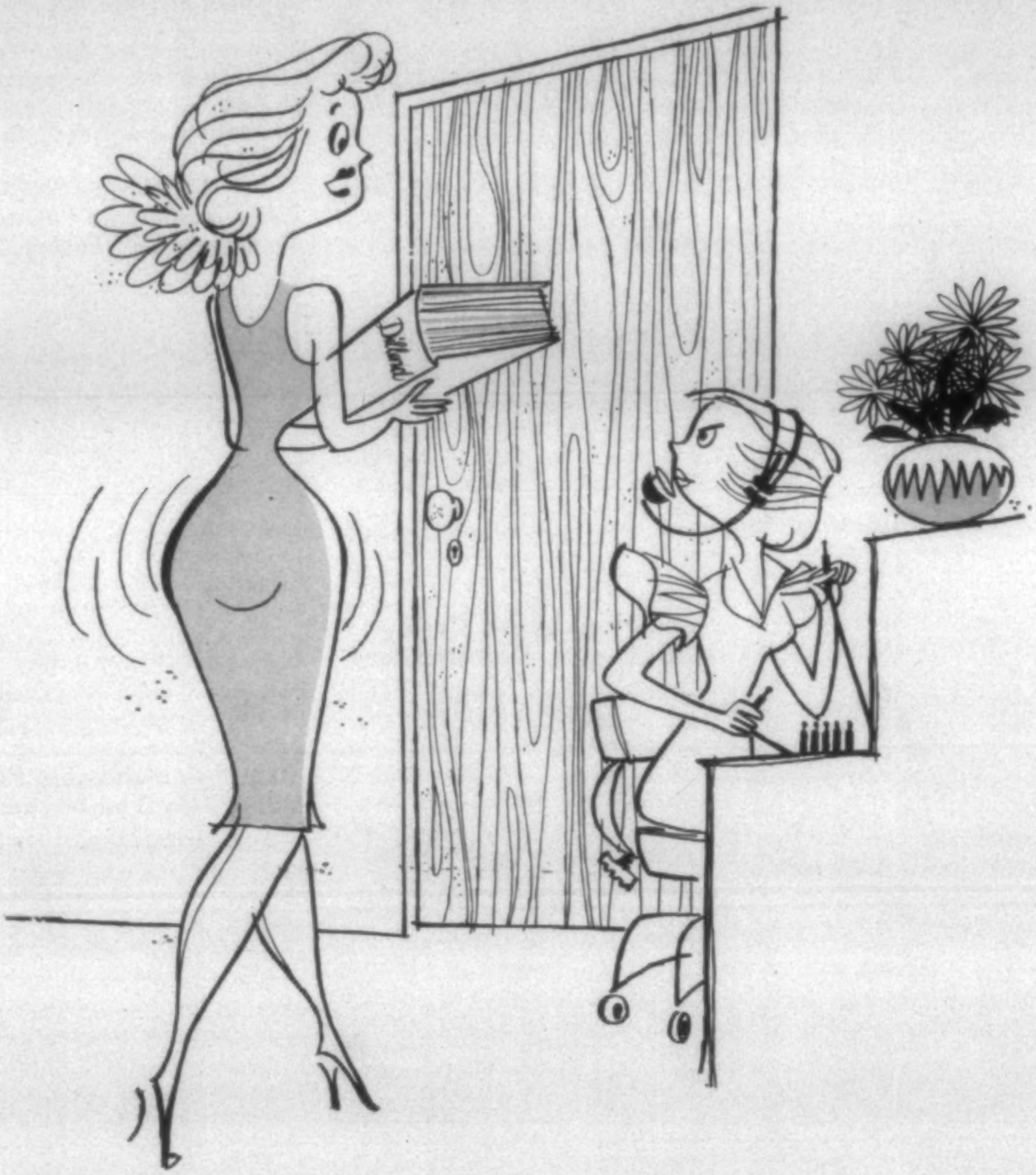
Textile Hall Corp. Explores Possibilities Of New Building

Textile Hall Corp, which puts on the Southern Textile Exhibition, is considering the use of a new building for the 1962 exhibition. James H. Woodside, president of the corporation, said that the group is exploring the possibilities. Space for the S.T.E. has been growing more limited each year. For last year's exhibition, an additional building across the street from Textile Hall, was rented to take care of some of the exhibitors. Present indications are that next year's show will have even more exhibitors than the 380 who participated in the last one.

Dow Corning Expands Its Greensboro Facilities

To provide improved technical service to the textile industry, Dow Corning Corp., Midland, Mich., has expanded its laboratory and production facilities in Greensboro, N. C. Two new buildings, each with approximately 10,000 square feet, have been completed at 2910 Patterson St. One building houses new production and warehousing facilities for Syl-mer brand silicone textile finishes; the other contains complete laboratory facilities for technical service, product development and quality control.

An important phase of Dow Corning's expanded Greensboro laboratories, the company reports, is continual quality control testing of fabrics submitted by mills and finishers to meet performance



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1926 "IF IT'S PAPER" 1961

standards established for Syl-mer identification. These tests include initial water repellency, resistance to a standardized staining material and durability after launderings or dry cleanings.

Product development activities include trial runs at textile plants with new or improved Syl-mer textile emulsions, and recommendations for bath formulations where Syl-mer is used in combination with other textile finishing agents. At the present time there are seven types of Syl-mer emulsions sold, each one tailored to a specific fabric or finishing process.

General Plastics Reminds Mills Of Teflon Coating

General Plastics Corp., Bloomfield, N. J., is reminding mill management that it schedules its production to accommodate its Teflon coating service during the textile industry vacation period. The company reports that since its move to Bloomfield it has larger facilities for the Teflon coating of dry cans, rollers, slasher cylinders, pin-plates and other equipment.

Food Machinery & Chemical Is To Become FMC Corp.

Food Machinery & Chemical Corp., San Jose, Calif., will change its name to FMC Corp. on July 1 of this year. A management proposal to make the name change received stockholders approval at the company's annual meeting held recently at its executive offices in San Jose.

FMC chairman, Paul L. Davies, said that the broadly diversified company had outgrown its name.

The firm furnishes the textile industry such peroxygen chemicals as hydrogen peroxide, peracetic acid, persulfates and sodium perborate through its Becco Chemical Division in New York City.

Pioneer Heddle & Reed Employees Reject Union

Employees of Pioneer Heddle & Reed Co., Atlanta, Ga., have rejected representation by the United Mine Workers of America. The election, conducted by the National Labor Relations Board, was called for by the union in a January petition. The company was represented by Constangy & Prowell of Atlanta.

Industrial Rayon Corp. Ends Losses, Reports Profit

Industrial Rayon Corp., Cleveland, Ohio, reports that losses incurred through 1960 have been terminated and that net income for the first quarter of 1961 was $324,657 compared with a net loss of $504,134 in the first quarter of 1960. Sales for the first quarter of 1961 amounted to $10 million which compares with sales of $12.9 million for the first quarter of 1960.

Frederick L. Bissinger, president, said the program for increasing production of the company's recently announced new and improved Tyrex rayon tire cord is going along on schedule and that substantial production will be reached next month. He also noted that during the first quarter the Painesville, Ohio, plant started large-scale manufacture of Dy-Lok, a solution-dyed rayon textile yarn which previously was produced at Covington, Va.

CONSTRUCTION HAS BEGUN on this new facility for Southern Machinery Co. of Greenville, S. C. The $200,000 plant will house manufacturing as well as administrative and clerical offices and the company's research and development division. Plans provide for two other construction phases that will double the plant's size when additional products are added to the company's operation. Southern produces the Hunt loom let-off and the Bild-O-Matic building motion for spinning frames and the Smoothee, loom attachment designed to eliminate creases caused by the contracting factor in synthetic and blended weaving.

Fiber Associates Formed, To Operate In Easley, S. C.

A new firm, Fiber Associates Inc., has been formed in Easley, S. C., and will engage in research and experimentation of fibers, chemicals and equipment for the synthetic textile industry. The firm is expected to be in active operation within six months. When full operation is attained, the company expects to have 12 scientists and engineers on its staff.

The principals of the new firm are: John C. Bodansky, Gastonia, N. C., president; R. C. McCall Sr., Easley, vice-president and treasurer; and Dan J. Quinlan, Shelby, N. C., and A. R. Alexander of Brooklyn, N. Y., directors. The new firm was capitalized at $50,000.

Electronic Assembly Plant Opened By The Foxboro Co.

A $700,000 assembly plant in East Bridgewater, Mass., has been opened by The Foxboro Co., Foxboro, Mass., manufacturer of industrial instruments for measurement and control.

Employing a staff of 150, the new 40,000 sq. ft. plant will allow Foxboro to expand the manufacture and assembly of Electronic Consotrol Instruments which are utilized in process control systems.

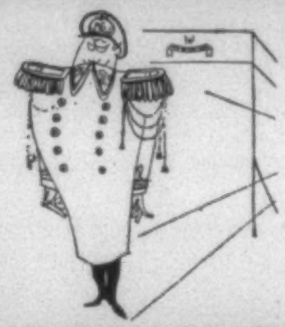
Production of all the solid-state electronic line has already been transferred to the new plant. The ultimate aim is to expand this facility to handle the increasing demand for electronic instrumentation in all phases of industrial processing.

The new plant, a single level structure of brick and aluminum siding, is located on a 120-acre site and can be expanded as required.

Hartford Fibres Registers Polynosic As Fiber Name

Hartford Fibres Co., New York City, division of Bigelow-Sanford Inc., announces it has been granted official registration for the trademark Polynosic, a descriptive term for its new Zantrel fiber.

Polynosic is a coined word from



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"poly" meaning many and "nosi" meaning fibrils. Though basically a cellulosic fiber and therefore generically a type of rayon, Zantrel is said to have unique characteristics in molecular makeup and performance quality unlike conventional rayon. Use of the description "Zantrel Polynosic rayon" is therefore intended to distinguish it from regular rayon.

Atlas Powder Co. Changes Name, Acquires Stuart Co.

Atlas Powder Co., Wilmington, Del., has changed its name to Atlas Chemical Industries Inc., and has announced the merger of the Stuart Co., Pasadena, Calif., into Atlas. Stuart manufactures ethical pharmaceuticals. A stock split is also effective with the merger. Four shares of Atlas stock will be exchanged for each share of Atlas Powder Co.

National Starch Acquires Kleen-Stik Products Inc.

National Starch & Chemical Corp., New York City, and Kleen-Stik Products Inc., recently announced the purchase of the business and assets of Kleen-Stik by National Starch & Chemical. Kleen-Stik will operate as a subsidiary corporation, and the present management will continue to direct all operations of the new company.

It produces pressure sensitive labelling papers, foils and films which are sold to printers for conversion into labels and point-of-purchase materials used in the packing and merchandising fields.

National Starch & Chemical Corp. manufactures packaging adhesives and also vinyl acetate polymers and copolymers, structural adhesives and specialty starch made from corn.

Celanese Founder Set Record As Holder Of U. S. Patents

Dr. Henry Dreyfus, one of the founders of Celanese Corp. of America, is credited with holding a record number of U. S. patents in a recent Congressional study. He held some 600 patents between 1920 and 1949.

His brother, Camille Dreyfus, also a founder of Celanese Corp., was granted 257 U. S. patents in the same period. The brothers were particularly known for their inventions in the cellulose acetate field.

General Tire Erects Plant For Textileather Division

A $400,000 building is presently under construction for the Textileather Division of General Tire & Rubber Co., Toledo, Ohio. The building will be located at the company's plant in Toledo and will be completed early in December. It will be occupied by a number of departments of the division including administrative, sales, accounting, production control, purchasing, traffic, personnel, factory administrative officials, advertising and sales promotion and the tabulating department.

The 24,000-square-foot building will be completely air-conditioned with a cafeteria seating some 160 persons.

Celanese Expects Second Quarter Sales To Be Up

Sales of approximately $74 million and earnings in excess of 50 cents a share are expected by Celanese Corp. of America, New York City, for the second quarter of 1961 as compared with first quarter earnings sales of $62 million and per-share earnings of 32 cents.

The company reports that planned capital outlays for new plant facilities in 1961 are $26.8 million. Projected expenditures for the next five years total $140 million with 33% going for chemicals, 30% for polymers, 28% for fibers and 9% for plastics.

Firestone Co. To Produce Lofted Nylon For Carpets

The Firestone Tire & Rubber Co., Akron, Ohio, has announced plans to produce a lofted nylon filament for rugs and carpeting at Hopewell, Va. Roger S. Firestone, president of the Firestone Synthetic Fibers Co., said the company has acquired the trade name Nyloft from the Industrial Rayon Corp. of Cleveland, Ohio, and will begin production within a month.

Firestone will become one of three leading producers of lofted nylon filament with an initial capacity of approximately four million pounds. Industrial Rayon has produced Nyloft for several years at a plant in Covington, Va.

Although production will be made at the company's plant in Hopewell, sales will be handled through the established sales offices at Pottstown, Pa., and at 45 Rockefeller Plaza in New York City.

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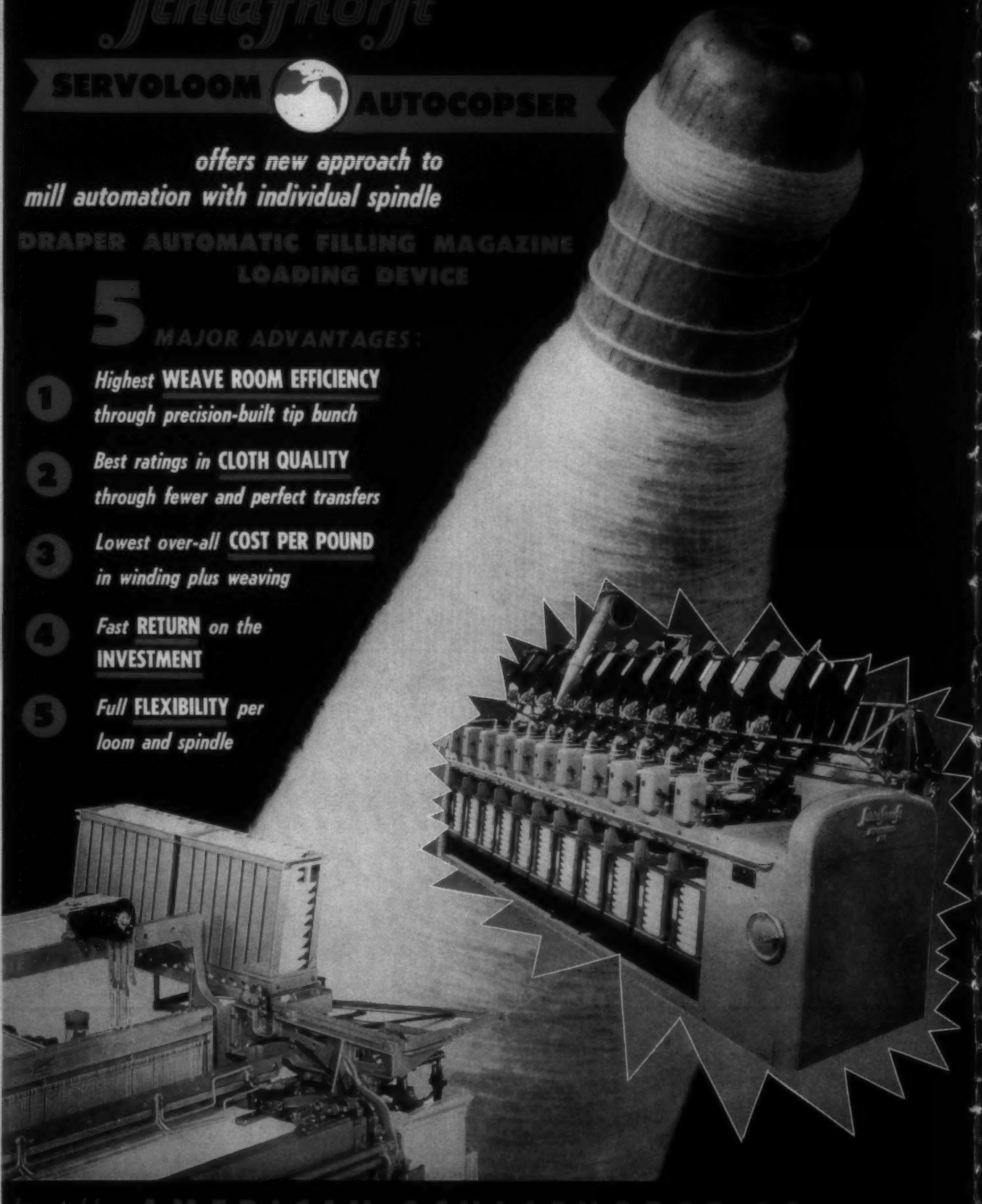

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textile bulletin

VOL. 87 JULY 1961 NO. 7

The Textile Industry Must Automate Or Liquidate

WE'RE LAGGING BEHIND OTHER BASIC AMERICAN INDUSTRIES IN DEVELOPING BREAK-THROUGHS IN MACHINE TECHNOLOGY

By WILLIAM F. ROBERTSON
President
South Carolina Textile Manufacturers Association*

WE all know that in any human endeavor there comes a time of decision and I believe, for the textile industry, that time is now. It has become crystal clear that the textile industry, as we have known it, loved it, and have labored for it for many years, may in many respects not be recognizable ten years from now if judged by today's standards. The forces of circumstances, many of them beyond our control, will force us to change our pace of normal evolution to what will amount to a surge of revolutionary technological changes of no little magnitude.

Uncontrollable Circumstances

These circumstances, as I see them, fall into two general areas. Our market at home and abroad is one; government influence on our operations is the other. In both of these areas we have witnessed vast and upsetting changes in recent years. These two areas, the market place and government influence, are controlled by two sets of laws—the natural laws of economics and the unnatural laws or directives of government. These two sets of laws, in direct conflict with each other, have confused and are fast beginning to dominate our industry.

There have been changes in both areas:

(1) Government foreign trade policy has created a circumstance by which a rising flood of imports has captured an alarming share of our domestic market.

(2) Economic changes, influenced in great part by our government's foreign aid program, have been a factor in the drastic curtailment of our historical foreign markets. Exports of our products steadily decline.

(3) Government policy forces us to operate in a more costly environment than our overseas competitors. The unrealistic and artificially high price of cotton to domestic mills is one glaring example of such an inequity.

(4) Government policy controls our fate and marketing practices in the fields of taxes, in depreciation, and in so many other ways. Restrictive and confusing directives bombarded us in every phase of our daily operating existence. On the other hand, uncontrolled low foreign operating standards create and leave us an entirely unfair competitive situation in any open market.

Automate Or Liquidate

Now, where are these forces, these changes in circumstances, taking the textile industry? I say, and I believe, they will force us to automate or liquidate! This second choice is unthinkable and unacceptable.

Complete automation inevitably would have come to the textile industry, as it is coming to so many other basic American industries. However, these forces over which we have no control are compelling our industry to revise its approach and speed up its timetable. Almost daily we are witnessing breakthroughs in the technology of textile manufacturing.

You know of these things more than I; but to mention a few, there are the shuttleless loom, automatic doffers, and direct spinning. It is my firm belief that the textile industry must reach forward with increasing willingness to grasp these new techniques, these new machines which will transform our already modern industry to an ultra-modern one.

We must embrace these new methods as quickly as they become available to us. Our industry's own needs demand them, whether they be made available by American machinery builders or by overseas manufacturers.

Machinery Builders Lagging

Despite the fact that we are the most modern and productive textile industry in the world today, our machinery suppliers must understand that the extreme disadvantage under which we must operate compels us to insist upon, and to reach for heights of automatic productivity hardly even imagined until now. Without intent to criticize but for the purpose of emphasis, I will state here that the American textile machinery builders have not yet awakened, as I believe they should, to the urgency of our position.

Most of the recent significant improvements in our equipment originated abroad and we all know that one of our members, a textile industry leader and not an equipment machinery builder, is responsible for the development of the automatic doffer. Our domestic textile machinery manufacturers have not been as progressive as their foreign counterpart. This is most unfortunate for them and for us.

These changes in our industry, which I believe to be inevitable, will in turn effect changes in our role as an employer, in our relationship to the economy of our state, and in the position we occupy in the localities in which we operate. This progress will call for a new understanding and co-operation between our state and local governments and our industry.

We have always prided ourselves on being the employers of large numbers of fine, faithful and loyal people of South

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*From a paper delivered before the 55th annual meeting of the South Carolina Textile Manufacturers Association, June 1-3, Sea Island, Ga.

Carolina. We have continued diligently to maintain high levels of employment even during times when little or no profits were being realized. We will continue to be big employers, but we may not be proportionately as large a factor in South Carolina as we have been in the past.

Let's face the facts of life, these technological improvements will demand more highly skilled individuals than man our plants today, and the ratio of workers to production obviously must and will be changed. This means, of course, that we may provide fewer jobs, but it is equally certain these will be better jobs for our people. I believe every individual company in our industry faces the effects of these great and rapid changes. I am sure, too, that the impact of these changes will be felt by every person in every plant.

Drastic Changes

When a great industry like the textile industry, which makes up some 70% of South Carolina's industrial base, enters into a transition of such magnitude it means that the whole economy of the state also will undergo drastic and dramatic change. This will affect many businesses, large and small, which are inter-dependent upon the prosperity of the textile companies. It is certain to have an effect upon state and local government revenues. When such revenues are affected upward or downward, it affects the programs of public education, health, and all other phases of government administration—and thereby every person in South Carolina.

We desperately hope this new textile industry will indeed and in time mean much more to the state's economy and to the working conditions of those employed than has our industry in the past. I firmly believe it will! This is no one-way street. Along with our industry's responsibility so strongly affected by the federal government requirements, there will be, on the other hand, definite responsibilities on the part of state and local governments toward the textile industry.

The state must find ways, and now, to step up education in general and in industrial training specifically. Life grows more and more complex, and the South Carolina textile industry of the immediate future will require greater and different kinds of skills from the people who run its plants. This applies to every category of employment from the lowest to the highest level of occupation.

There has been, for years, a tendency to direct all thinking to the man on the street, the so-called common man. The idea seems to be that the common man has come into his own at last. This has resulted in all kinds of legislation to, may I say, protect such people from cradle to grave. There is a danger in such thinking, for this philosophy of the common man is a philosophy of mediocrity. When we are sick we want an uncommon doctor; when our children are taught we want for them an uncommon teacher; and when we fight a war we desperately want an uncommonly good army.

The textile industry is no different. We must now have uncommonly well trained people. Mediocrity is no longer enough. And we look to our state's educational system to provide properly trained people for us.

Another big responsibility of the state is to attract more varied industry and to improve its agricultural techniques so as to encourage expansion in these areas. Our state *must* broaden its base of economic development. Here again, industrial training will be decisive as to whether South Carolina can provide workers trained to operate such industries as chemicals, electronics, metal works and the like.

No Apologies

We make no apologies for the textile industry as we know it in South Carolina today. It is a modern one. What I am trying to say is that the combination of pressures, policies, and economic competitiveness have speeded up the timetable of progress, demanding that the dream mill come not in the distant future but that it be achieved as soon as is financially and technologically possible. The rapid transition we envision requires nothing less than a crash program on the part of every segment of our state's economy.

We have been an angry industry for at least ten years. We are angrier today than ever before because we know that many of the most vital aspects of our industry are completely at the mercy of the federal government. Every indication at this time is that before things get better, we will be even

(Continued on Page 76)

Robertson

Robertson And Small Named To Top Posts In The South Carolina Textile Manufacturers Association

Small

MEMBERS of the South Carolina Textile Manufacturers Association, meeting in annual session last month at Sea Island, Ga., re-elected William F. Robertson to a full term as president. He had previously served a partial term, succeeding George P. McClenaghan, vice-president of J. P. Stevens & Co., Greenville, who retired last Fall because of health.

Robert S. Small, president of Woodside Mills, Greenville, was named vice-president. He has been serving as vice-president since being named to succeed Robertson in that post when the latter assumed the presidency.

Four new members were elected to the board of directors. They are James W. Harrell, vice-president of J. P. Stevens & Co., Greenville; J. J. Lyons, vice-president of M. Lowenstein & Sons, Anderson; Joe D. Moore, vice-president of Reeves Brothers Inc., Spartanburg; and L. A. Savage, vice-president of The Kendall Co., Charlotte.

The new directors replaced three executives whose terms had expired, plus the post vacated by the death in May of J. P. Abney, president of Abney Mills, Greenwood.

Retiring from the board were R. M. Cushman, vice-president of Amerotron Corp., Aberdeen, N. C.; Walter Regnery, president of Joanna Cotton Mills Co., Joanna; and W. H. Grier, president of Rock Hill Printing & Finishing Co., Rock Hill.

Some 240 members, wives and invited guests attended the meeting.

Sliver Direction, Hooked Ends Have Significant Effect On The Parallelization Of Cotton Fibers

SOUTHERN REGIONAL RESEARCH LAB TESTS INDICATE NEED FOR HIGHER DRAFTS IN THE SECOND DRAWING

By JACK SIMPSON
Southern Regional
Research Laboratory[1]
New Orleans, La.

ABSTRACT

THE Lindsley mechanical method for measuring fiber parallelization was compared with a method similar to Morton's, using tracer fibers.

It was found that sliver direction had a highly significant effect on the parallelization measurement with the Lindsley instrument. The tracer fibers showed that this was due to the predominance of hooked ends in one direction. This result indicated that the Lindsley instrument could be used to obtain a measurement of the predominance of hooked ends in a given direction.

It was indicated that a high draft tended to straighten out more of the trailing than leading hooks.

The tracer fibers showed that drafting tended to straighten and align the longer fibers better than the shorter ones of a particular cotton.

PREVIOUS investigations *(4, 5, 6, see references at end of article)* have dealt with the effect of processing on fiber parallelization and arrangement and in turn the effects of fiber arrangement on processing efficiency, especially combing *(7)*. The technique used in these investigations involved the use of tracer fibers and a low-powered microscope. Although it is possible with this technique to determine the exact shape the fibers take in the sliver and the angle they make with the sliver axis, it is a somewhat difficult method to use. Therefore, a faster mechanical method to obtain an indication of fiber parallelization and arrangement would be very useful in studying their effect on processing.

An investigation is now underway to determine the effect of fiber drag upon the draftability of cotton. There is no doubt that fiber parallelization affects the drag measurement of cotton slivers and rovings. A simpler method for indicating fiber parallelization and arrangement would also enhance this investigation.

The Lindsley mechanical method *(8)*, which is simpler and faster in its use than the visual method, was selected and compared with a visual method similar to that of Morton *(4, 5, 6)* at various processing stages to determine its effectiveness in indicating fiber parallelization. Along with the investigation of the Lindsley method, observations were made of the effect of processing on fiber arrangement not noted in the previous studies *(4, 5, 6, 7)*.

The drafting forces of the slivers were also measured and compared to the results of both the visual and Lindsley methods to determine the effects of fiber parallelization upon drag.

Materials And Methods

Cotton Fiber Properties: The cottons used in this investigation along with their respective fiber properties are listed in Table 1. The methods of the American Society for Testing Materials were followed in determining the fiber properties *(1)*.

Description of Visual Method: A visual method similar to that of Morton *(4, 5, 6)* was devised as follows: Approximately .04 of a per cent of maroon dyed tracer fibers were added to 13 ounces/yard (403 Kilotex) cotton laps as they were fed to the card and processed into sliver [40 grains/yard (2.83 Kilotex)]. A 7-inch length of the sliver was placed between two glass plates and submerged in a rectangular glass vessel containing tri-cresylphosphate. A Type L photomicrographic camera with 72 mm. microtessar lens mounted on opal glass was focused on the submerged sliver. With this apparatus and the tracer fibers dyed maroon, photographic negatives were developed, exhibiting only the tracer fibers, which were imaged to a 6X magnification. The image was traced on paper and the length of the fibers measured with a map computer. The actual length of the fiber image, the longest effective length, and the angle that the longest effective length made with the sliver axis were measured. The longest effective length is the length of the longest straight line between any two points on the fiber image. Approximately 140 individual fiber measurements constituted each test.

Mechanical Method: The mechanical device as designed by Lindsley was constructed. Photographs of the instrument and a description of the procedure are contained in publication *(8)*. A brief description of the principles involved are: The sliver was clamped under two plates upon a base plate covered with a renewable thin, hard paper pad with the plates being referred to as the left and right plates. The sliver was cut at the outside edge of the right plate. This plate was removed and the sliver held by the left plate was combed. The fibers that were combed out were weighed and labeled "C." The right plate was replaced over the combed portion of fibers held by the left plate. The fibers extending beyond the outside edge of the replaced right plate were cut, weighed and labeled "E." This plate was again removed and the held portion of fibers was cut at the outside edge of the left plate. This portion of fibers was weighed and labeled "N." The ratio of the weights of E/N is an indication of the parallelization of the fibers and is called the cutting ratio. The ratio of the weights of C/E+N is called the combing ratio. Ten sliver samples were used for each test. All measurements were made on slivers after delivery into the cans in carding and drawing.

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[1] One of the laboratories of the Southern Utilization Research and Development Division, Agricultural Research, Agricultural Research Service, U. S. Department of Agriculture.

Measurement of Drafting Force: The force required to draft the fibers in the slivers was measured by the West Point Cohesion Tester[2] electrically connected to a Uster Custom Tension Recordograph.[2] The Cohesion Tester consists of two sets of drafting rolls with the front set being connected to a strain gauge and transducer. This translates the force required to draft the fibers into electrical energy, which is recorded by the Tension Recordograph.[2] The linear speed of the front drafting rolls is 2.91 cm./sec. and that of the recording chart, .5 cm./sec. The drafting force on the chart was measured at 1 cm intervals—corresponding to 5.82 cm. of drafted sliver. Approximately 80 readings were taken for each test.

Table 1. Fiber Properties of the Selected Cottons

Cotton Variety Sample	Classer's Evaluation Length inches	Classer's Evaluation Grade	Fiber Length and Distribution Fibrograph U.H.M. inches	Fiber Length and Distribution Fibrograph mean inches	Fiber Length and Distribution Uniformity Ratio Per Cent	Micronaire[1] Reading	Strength[2] Index	Maturity[3] Per Cent
Unknown	15/16	M	.97	.76	79	4.74	8.27	91
Coker 100 Wilt	1⅛	SM	1.05	.86	82	4.64	7.89	89
Unknown	1¼	M	1.26	.92	73	3.85	7.84	77

[1] Curvilinear Scale [2] Pressley Method "zero gauge" [3] Random Maturity NaOH Method

Table 2. Actual Length, Longest Effective Length, Angle of Inclination and the Ratio of Effective Length to Actual Length of the Fibers of the 15/16" Cotton as Found by the Visual Method

Process	Actual Length	Longest Effective Length	Incline Angle	r[1]
Card Sliver	.657	.364	17.37	.56
First Drawing Sliver 4D 4D	.648	.461	8.50	.69
Second Drawing Sliver 4D 4D	.577	.459	10.03	.76
First Drawing Sliver 8D 8D	.704	.518	8.03	.72

[1] $r = \frac{\text{Longest effective length}}{\text{Actual length}}$

Processing Procedure: The short and medium staple cottons were carded on the Whitin[2] revolving flat top card at 12 lbs./hr. and the long staple was carded at 6 lbs./hr. The Medley[2] 4-roll drawing frame with cushion-top rolls and a tension draft in the middle zone was used for drawing. The cottons were processed into second drawing sliver by two procedures. The first employed 4 doublings and a 4 draft at both first and second drawing, while the second employed 8 doublings and 8 draft at each drawing operation.

Table 3. Actual Length, Longest Effective Length, Angle of Inclination and Ratio of Longest Effective Length to Actual Length of the Fibers of the 15/16" Cotton When Separated Into Two Length Groups—as Depicted by the Visual Method

Process	Fibers $\geq$ .694 in. Actual Length	Fibers $\geq$ .694 in. Longest Effective Length	Fibers $\geq$ .694 in. Incline Angle	Fibers $\geq$ .694 in. r[1]	Fibers $\leq$ .346 in. Actual Length	Fibers $\leq$ .346 in. Longest Effective Length	Fibers $\leq$ .346 in. Incline Angle	Fibers $\leq$ .346 in. r[1]
Card Sliver	.929	.504	15.15	.543	.253	.154	25.57	.617
First Drawing Sliver 4D 4D	.903	.655	5.80	.724	.256	.154	18.10	.603
Second Drawing Sliver 4D 4D	.913	.784	6.35	.850	.231	.159	20.57	.660

[1] $r = \frac{\text{Longest effective length}}{\text{Actual length}}$

Table 4. Percentages of Hooked Fiber Ends (As Sliver Enters the Can) As Depicted by the Visual Method

Cotton and Process	Trailing Ends Hooked	Leading Ends Hooked	Both Ends Hooked	No Ends Hooked	Other
15/16" cotton	%	%	%	%	%
Card sliver	37.50	10.29	23.53	18.38	10.29
First drawing sliver, 4D 4D	18.11	26.77	13.39	34.65	7.09
Second drawing sliver, 4D 4D	22.12	13.93	4.42	53.10	4.42
First drawing sliver, 8D 8D	13.25	43.37	4.82	36.14	2.14
1¼" cotton card sliver	45.79	12.14	24.30	7.48	10.28

Results And Discussion

Table 2 shows the average of: the actual length of the fibers, the longest effective length, the angle of the inclination of the effective length with the sliver axis, and the ratio of longest effective length to actual length, as found by the visual method for the 15/16-inch cotton. The angle of inclination decreased from the card to first and second drawing slivers. There was little difference between the incline angle of first and second drawing slivers. The ratio of the effective length to actual length increased through both drawing operations, indicating the fiber straightening action of the drawing operations. The first drawing sliver processed with 8 doublings 8 draft, and the sliver processed with 4 doublings, 4 draft, had approximately the same incline angle and ratio of effective actual length. The tracer fibers of the second drawing sliver processed with 8 doublings, 8 draft, were so widely dispersed that an excessive number of negatives were needed to obtain enough fiber images for a test.

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[2] Use of a company and/or product name by the Department does not imply approval or recommendation of the product to the exclusion of others which may also be suitable.

The data of the 15/16-inch cotton from which Table 2 was composed was also used to determine the effect of processing on the degree of parallelization of fibers of specific lengths within a particular cotton by arbitrarily selecting fiber lengths equal to or longer than .694 inch and those equal to or less than .346 inch. Their characteristics such as actual length, longest effective length, angle of inclination, and the ratio of longest effective length to actual length are shown in Table 3. This table shows that processing had greater influence on the longer than the shorter fibers. The incline angle of the longer group decreased from approximately 15° in card sliver to 6° in drawing, while for the shorter group the decrease was only from 25° to 20°. In the card sliver the longer fibers were more curled and hooked than the shorter one. By the second drawing, however, the longer fibers were much straighter.

In Table 4 the arrangement of hooked fiber ends are recorded in a method similar to that used by Morton *(5)*. As in Morton's work on Fibro it was found that in the fibers of the carded cotton slivers, prior to being fed into cans, the incidence of the trailing hooks was greater than the leading hooks. The 1¼-inch cotton card sliver had a higher percentage of fibers with hooked ends than the 15/16-inch cotton sliver. The drawing operations tended to decrease and equalize the direction of hooks.

Table 5 lists the cutting and combing ratios by the Lindsley method for the card, first and second drawing slivers of the 15/16-inch cotton made with a right plate width of .5 inch. These slivers were placed in the instrument first in the direction as taken from the can (normal direction) and then in the reverse direction. As seen from the table, the sliver direction had a highly significant effect upon both the cutting and combing ratio. This effect must be considered in any mechanical method for measuring fiber parallelization and has been recognized in another independent study *(9)*. The reason for sliver direction yielding different cutting ratios is due to the predominance of hooked ends in one or another direction. This can be explained by referring to Table 4 and Fig. 1. When the card sliver was normally taken from the can, it had a predominance of hooked ends in the leading direction. When this sliver was cut and hand combed in this direction, it yielded a greater weight of "E" than when it was cut and combed in a reversed direction, because the leading hooked ends were combed out in the forward direction. This phenomenon held true for slivers of first and second drawing as would be expected from examining Table 4.

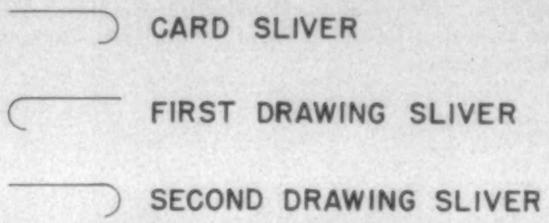


Fig. 1—Arrangement of Majority of Fiber Hooked Ends in Card, First and Second Drawing Slivers.

Table 5 shows that the combing ratio is also dependent on sliver direction. However, it does not appear to be associated with hooked ends, for the ratio in the reverse direction is always larger than in the normal direction. This table also shows that the high draft at first drawing tended to straighten out the hooked ends that entered the drawing frame in a trailing position more than those that entered in a leading position. This is shown by the fact that the cutting ratio for the sliver processed with 4 doublings, 4 draft is reduced from .0704 in the reverse direction of card sliver to .038 for the normal direction of first drawing, while for the sliver processed with 8 doublings, 8 draft, it was reduced from .0704 to .027. The ratio for the normal direction of card sliver to the reverse direction of first drawing is reduced from .1214 to approximately .065 for both the high draft and low draft drawing. This indicates that under the present system of processing a low draft at first drawing followed by a high draft at second drawing would be more effective for reducing hooked ends.

The differences between the cutting ratios of the normal and reverse sliver direction for the slivers of the card, first and second drawing, for both methods of processing are statistically significant. The combing ratios between sliver directions are significant in all instances except for first drawing sliver using 8 doublings, 8 draft. The differences between cutting ratios of card sliver, normal direction; to first drawing sliver, reverse direction; to second drawing, normal direction, and vice versa are significant in all instances.

Table 6 shows the effect of sliver direction upon the force required to draft the 15/16-inch cotton slivers, with the cohesion tester at roll settings of 1½ inches and a draft of 4.18. These slivers were drafted first in the direction as taken from the can (normal direction) and then in the reverse direction. This table, like another study *(3)*, shows that the hooked ends have a decided effect upon drafting force. When the majority of hooked ends were leading in the direction of drafting, the force was less than when they were trailing,

Table 5. The Cuttting and Combing Ratios E/N and C/E+N by the Lindsley Method for the Card, First and Second Drawing Slivers of the 15/16" Cotton Made with a Right Plate Width of .5 inch

	Cutting Ratio E/N		Combing RatioC/E+N	
Sliver Direction	**Normal**	**Reverse**	**Normal**	**Reverse**
Card Sliver	.1214	.0704	1.282	1.516
First Drawing Sliver 4D 4D	.038	.065	.780	.869
Second Drawing Sliver 4D 4D	.042	.029	.661	.829
First Drawing Sliver 8D 8D	.027	.064	.756	.805
Second Drawing Sliver 8D 8D	.034	.021	.672	.746

Table 6. Effect of Sliver Direction Upon the Force Required to Draft the 15/16" Cotton Slivers with a Roll Setting of 1.5 inches and a Draft of 4.18

Sliver Direction	**Normal**	**Reverse**
Process	**— Force in Grams —**	
Card Sliver	141.15	178.96
First Drawing Sliver, 4D 4D	102.34	93.35
Second Drawing Sliver, 4D 4D	80.10	87.18
First Drawing Sliver, 8D 8D	104.43	92.77
Second Drawing Sliver, 8D 8D	72.95	73.77

Table 7. Effect of Plate Width Upon the Cutting and Combing Ratios of Card Slivers from Different Staple Cottons

	½" Plate Width		¾" Plate Width	
Cotton	E/N	C/E+N	E/N	C/E+N
15/16"	.1214	1,282	.0224	2.119
1⅛"	.141	1.235		
1¼"	.1730	.964	.0829	1.471

which indicated that less unhooking was taking place. The direction of sliver had less effect on the drafting force as the processing progressed. This indicated the removal of hooked ends in conformity with Table 4.

The Effect of Plate Width and Fiber Length Upon the Cutting and Combing Ratios: Table 7 shows the effect of the plate width on the cutting and combing ratios of card slivers of 15/16-inch and 1¼-inch cottons. As expected, increasing the plate width decreased the cutting ratio and increased the combing ratio. The decrease in cutting ratio was greater for the short than long staple cottons. This table also shows that at the same plate width the cutting ratio increased and the combing ratio decreased as the staple length increased. It is evident that it is unfeasible to compare the cutting and combing ratios of different length cottons at the same plate width. Itani *(2)* worked out an equation for calculating the degree of orientation (effective length times cos. incline angle divided by actual length) by using the cutting and combing ratios, and the equation of the fiber number distribution of the gripped fibers. It was found that values obtained by this equation were independent of plate width. This method would involve making fiber arrays and calculating equations for the fiber number distribution.

Table 8 shows the cutting and combing ratios of card slivers for three different length cottons where the plate was varied in proportion to the mean length of the cottons. The results here indicate that the fibers of the longer staple cotton were better orientated. Although the plate width is proportioned to the mean length, the fiber distribution will still affect the results. However, the intelligent use of such a method as this should still yield useful results when comparing the fiber orientation of different length cottons.

Summary And Conclusion

The results of this investigation indicate that the Lindsley method can be very useful in indicating fiber parallelization when the following items concerning its use are considered.

It is highly important that the direction of the sliver be recognized when making the tests. The comparison with the visual method showed this to be due to the effect of hooked ends on the cutting ratio E/N. The difference between the cutting ratios for the normal and reverse direction of sliver can be used for determining the predominance of hooked ends in a given direction.

The fiber length and length distribution affected the cutting and combing ratios by the Lindsley method. It is believed that this can be offset somewhat by proportioning the plate width to the mean fiber length.

Table 8. The Cutting and Combing Ratios of Different Staple Cottons Where the Plate Width Has Been Proportioned to Mean Fiber Length

Cotton	Plate Width	E/N	C/E+N
15/16"	.500	.1214	1.282
1⅛"	.563	.100	1.465
1¼"	.605	.075	1.531

A finding not noted in previous investigations with the visual method is that drafting tended to straighten and align the longer fibers better than the shorter ones of a particular cotton. The long staple card sliver had a higher percentage of hooked ends than the short staple.

Experiments using the Lindsley method indicated that a high draft tended to straighten out more of the trailing than leading ends. This indicates that under the present system of processing a low draft at first drawing followed by a high draft at second drawing, would be more effective for reducing hooked ends. Hooked ends had a decided effect upon the force required to draft the slivers. When the majority of hooked ends were leading in the direction of drafting, the required drafting force was less than when they were trailing.

Acknowledgments

The author wishes to express his appreciation to Mary L. Rollins and Verne W. Tripp for their aid and advice in devising the methods for obtaining photographs of the tracer fibers. Credit is also due to Arsema T. Callegan for his help in processing the card and drawing slivers. Appreciation is also extended to Evan J. Bowen for constructing the Lindsley-type instrument.

REFERENCES

(1) American Society for Testing Materials, A.S.T.M. Designations D1441-54, D1443-56, D1447-54T, and D-1448-58, Philadelphia, A.S.T.M., 1958.
(2) Itani, W., *J. Textile Mach. Soc., 5,* 10-24 (June 1958).
(3) Martindale, J. G., *J. Textile Inst., 38,* T 151-166 (1947).
(4) Morton, W. E., and Summers, R. J., *J. Textile Inst., 40,* P106-116 (1949).
(5) Morton, W. E., and Summers, R. J., *J. Textile Inst., 11,* T349-360 (1950).
(6) Morton, W. E., and Yen, K. C., *J. Textile Inst., 43,* T463-472 (1952).
(7) Morton, W. E., and Nield, R., *J. Textile Inst., 44,* T317-334 (1953).
(8) Lindsley, C. H., *Textile Research J., 21,* 39-46 (1951).
(9) Tabata, M., Hayakawa, K., and Takizawa, T., *J. Textile Mach. Soc., 6,* 5-10 (June 1960).

U. S. Cotton Consumption Falls Off In April As Compared With March

Consumption of cotton in the U. S. in April totalled 647,216 running bales as compared with 795,472 bales in March and 708,200 bales in April of last year. Daily average consumption in April was 32,361 bales against 31,819 bales in March and 35,410 bales in April 1960.

Summary Of Cotton System Activity—April 1961

Item	April 1961	March 1961	April 1960
ALL COTTON (Running Bales)			
Total Consumption			
United States	647,216	795,472	708,200
Cotton-Growing States	621,952	764,067	681,170
New England	22,634	28,256	24,371
Daily Average Consumption			
United States	32,361	31,819	35,410
FOREIGN COTTON			
(Equivalent 500 lb. gross weight bales)			
Total Consumption	7,178	9,184	8,499
Stocks	51,839	56,664	51,778
Imports	(NA)	2,929	3,180
MAN-MADE FIBER STAPLE (Thousand Pounds)			
Total Consumption	38,488	44,481	36,970
Stocks	34,863	33,348	41,102
Imports	(NA)	2,871	5,643
COTTON-SYSTEM SPINDLES			
In Place (thousands)	19,736	19,773	19,959
Active (thousands)	19,008	19,058	19,311
Hours Operated (millions)	9,096	11,196	9,821

NA—Not available.

S.T.A. Meetings Feature Discussions On Spinning

Eastern Carolina Division

APRIL 21, DURHAM, N. C.

THE Spring 1961 meeting of the Eastern Carolina Division of the Southern Textile Association was held Friday evening, April 21, at Turnage's Restaurant, Durham, N. C., with T. B. Stevens of Erwin Mills, chairman of the division, presiding.

A highlight of the meeting was a group discussion on spinning led by Robert L. Spencer of Morgan Mills Inc., McColl, S. C. A transcript of that discussion follows.

Moderator: Has anyone had any experience with flapper type revolving top roll clearers? Has your experience been good? Or bad? Some people have reported good results; others not so good.

Mill A: They're fairly effective to begin with, but when they get a little older, they lose their efficiency. The clearers accumulate and hold a lot of lint and oil and make more slubs.

Moderator: When you replace the clearer, do you go to the old woolen felt or do you use the synthetic rubber sponge?

Mill A: We use the rubber sponge. It gives us better results than the woolen felt, and is easier to put on the frame and easier to clean.

Moderator: How do you clean rubber aprons? Does the spinner clean them or do you take them off the frame? Do you use a brush? Machine? What about cleaning damage?

Mill C: We haven't torn any up and we use both the machine and brush. We've had them on six months.

Mill D: I've heard of a test that a mill down in South Carolina ran where the aprons were both taken off the frame and machine cleaned and cleaned by the spinners. I believe the mill decided to let the spinners clean them after running the tests.

Mill E: The spinners clean ours.

Robert L. Spencer of Morgan Mills, McColl, S. C., was moderator for the spinning discussion.

Mill F: We do the same thing. We've found that over a period of time, machine cleaning injures rubber on our aprons.

Moderator: Has anyone had any experience with spinning frame tapes that don't load up with fiber? Nylon? Cotton? Blends of nylon and cotton?

Mill F: We use nylon tape and are well pleased with it except for the loading. A machine should be developed that would clean these tapes. We also bond our tapes rather than sew them. One man does all our bonding and cleaning.

Moderator: Do you favor bonding over sewing?

Mill F: Yes, we do.

Moderator: Do you have hand brakes on your spindles?

Mill F: No, we don't.

Moderator: Would anyone here tell what they do to keep spinning tapes from loading? For a carded yarn? Combed?

Mill G: We put a half twist in our tapes and it's helped our loading problem considerably.

Moderator: How many frames do your spinning frame clearers cover? Give spindles per frame, gauge, yarn count, carded or combed, type cotton or stock.

Mill A: My cleaners cover eight frames on warp and 12 on filling. Our average count on warp is 22½s and filling is 23¼s.

Mill B: My cleaners clean 16 frames—eight filling and eight warp. Our counts are 22½s, 30s and 40s.

Mill C: Ours clean 12 frames. Our count is 31½s.

Mill D: We cover 14. Our counts are 20s filling and 24s warp.

Moderator: How do you keep the tracks clean on overhead cleaners or floor sweepers?

Mill G: We use a brush attached to the cleaner. As the cleaner travels around the frames, the brush sweeps the tracks. You have to keep a pretty close watch on the brush, though, to see that it doesn't wear down and rub the track. Make sure that the bristles are always stiff.

Moderator: What would happen if the brush did become worn?

Mill G: It would put a drag on the motor and possibly burn it out.

Mill F: We clean our tracks when we creel our roving.

Moderator: What relative humidity do you find gives you the best running work? Do you have vacuum end collection or lap stick? And what would be your average count? State whether you are carded or combed.

Mill F: We run 47-48% humidity and 24s warp and filling with lap sticks.

Mill E: We run 15s warp and filling and about 46% humidity.

Mill A: W run 38% with vacuum end collection.

Mill B: Relative humidity can be lowered some 5-10% when you use vacuum end collection.

Moderator: Why?

Mill B: Because it brings the humidity down from the air and sucks it over the fibers, therefore, you won't need as much humidity as before. Using an umbrella creel helps too. They're spread out more and the humidity has a better chance to penetrate the roving.

Mays, Stevens, Hughes

Gilbert C. Mays of Erwin Mills, Durham, has been named chairman of the S.T.A.'s Eastern Carolina Division succeeding T. B. Stevens of Erwin Mills at Erwin, N. C. Joe P. Hughes, Cone Mills, Hillsboro, is secretary of the division.

Moderator: What temperatures do you run with these humidities?

Mill A: That depends upon the weather. If you don't have air conditioning you can't really control it.

Mill B: We have refrigeration and run 82° F. with a 47% relative. We make 32s yarn.

Mill C: We run 85° with 48% humidity.

Mill D: Some synthetic mills run 90° and 30% humidity.

Mill E: We like it around 88° but it sometimes gets around 104°.

Moderator: Does refrigeration affect spinning day in and day out? How?

Mill C: It helps ends-down considerably. You don't have traveler drag because it helps prevent loading.

Mill D: Do you have soft cots or hard cots?

Mill D: We have the J490 on the top and 728 on the bottom. We've had some sad experiences on very soft cots. The minute you have a lap-up, it grinds one cot against the other. I would prefer a cot a little softer than the J490, but not the very soft kind.

Mill E: Soft cots run very well on our frames, but we have anti-friction bearings on our rollers. They're pretty terrible on solid rolls though.

Mill D: We have to turn our soft cots when we stand longer than regular weekends. If we're down for 48 hours they're turned, but not for 24.

Moderator: Does your waste increase when going to block creeling?

Mill G: Ours didn't increase too much, but we tag every bobbin from each slubber and all the bobbins from one slubber are run on the same spinning frame. This has eliminated big pieces. We don't have predetermined yardage counters.

Mill D: We've gone to block creeling and are satisfied with it. At first, we thought that all of the ends had to run out at the same time, but when I saw how it was done in another mill, we got it straightened out. Our spinners like the system better and we've saved some $18,000 a year with it.

Moderator: What size roving package do you have?

Mill D: 12x7 inches.

Northern North Carolina-Virginia Division

APRIL 29, DANVILLE, VA.

THE Northern North Carolina-Virginia Division of the Southern Textile Association held its Spring 1961 meeting on Saturday, April 29, at Danville, Va. Host for the meeting was Dan River Mills. Herman Cone Jr. of Cone Mills Corp., Greensboro, N. C., chairman of the division, presided.

Features of the meeting included an address by L. Aubrey Goodson Jr., vice-president and director of research, Dan River Mills, who spoke on "One Approach to Keeping Textiles in America" *(see page 38)*.

The technical program included group discussions on "Opening, Picking and Carding," led by Lance Shumaker, P. H. Hanes Knitting Co., Hanes, N. C.; "Spinning," led by Charles Sanford, Leward Cotton Mills, Worthville, N. C.; "Spooling and Warping," moderated by W. B. Chambley, Fieldcrest Mills, Fieldale, Va.; "Slashing," led by T. B. Hamrick, Fieldcrest Mills, Draper, N. C.; "Weaving," led by W. E. Howard, Erwin Mills, Cooleemee, N. C.; and "Quality Control," chairmaned by Paul Tucker, Erlanger Mills, Lexington, N. C.

A transcript of the spinning discussion, led by Mr. Sanford of Leward Cotton Mills, Follows:

Do soft cots improve breaking strength?

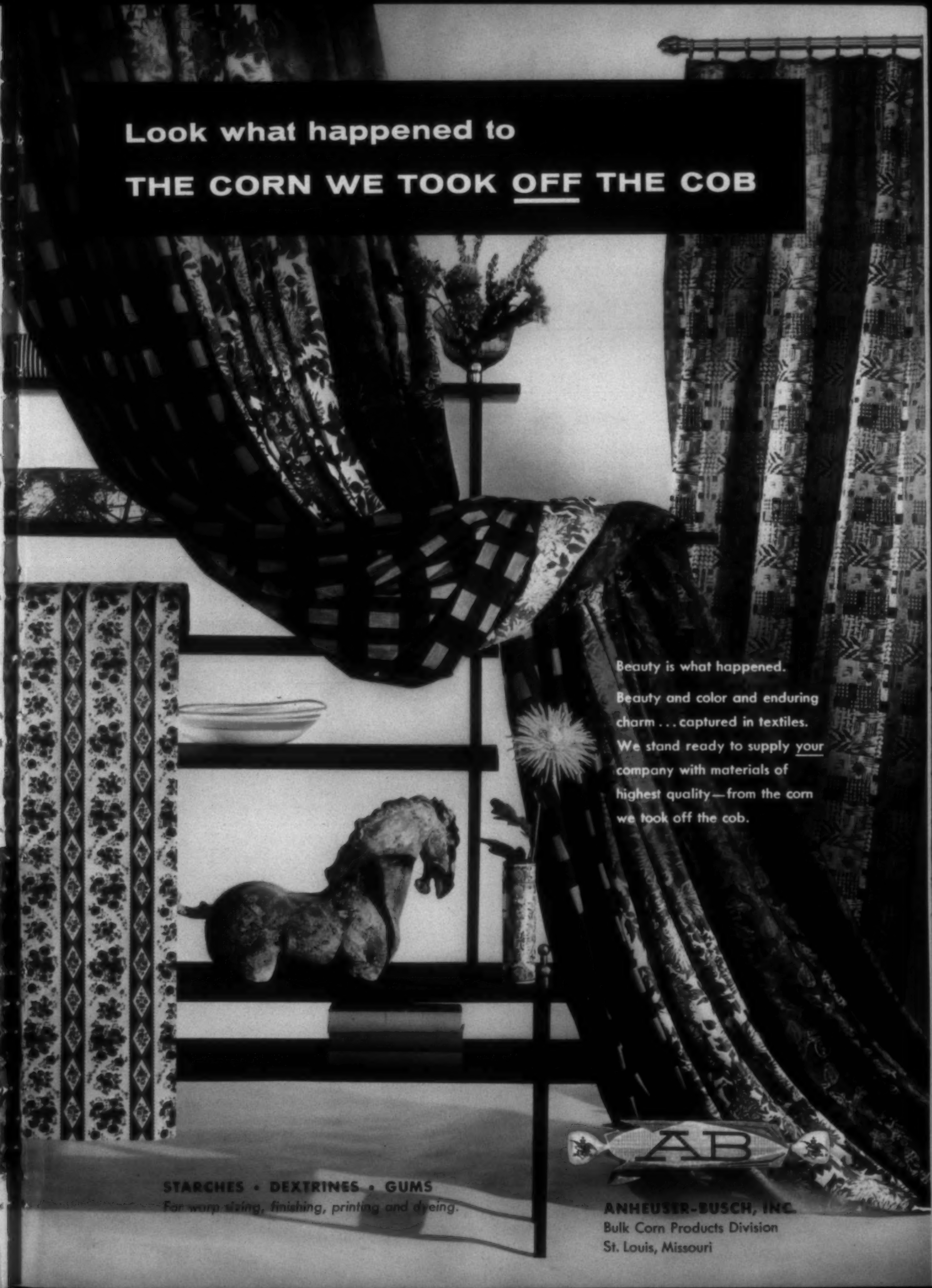
Moderator: What has been your experience with soft cots? Have they increased your breaking strength? How much? Are there any disadvantages you would associate with them?

Mill A: We've found that soft cots do help your breaking strength considerably. I can't quote any figures on just how much. One disadvantage we've found with them is that if you have a slight lap-up, it will groove the cot.

Moderator: What is your buffing schedule on them?

Mill A: We buff them every 2½ months.

Some 250 mill men and suppliers attended the Spring meeting of the S.T.A.'s Northern North Carolina-Virginia Division at Danville, Va., on Saturday, April 29.



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Moderator: How often do you replace your drafting aprons in spinning? Do you wash your aprons? How? How do you replace them—all at once? at random? or are your good aprons moved down?

Mill B: We have our aprons washed at a commercial laundry with a mild soap. We replace a full frame at the time. Washed aprons will go on certain frames where we can keep a careful check on them. Our aprons last two or three years.

Mill C: We replace aprons individually. We take all the aprons off the frame to inspect them.

Moderator: Would any of our associate members (suppliers) care to comment on soft cots?

Associate A: We've done a lot of work on soft cots, and I think in the next few months, they'll start coming up again.

Associate B: I don't recommend soft cots on solid rollers. In case of lap-ups, the solid roller cots will grind the other cots to pieces. Also, soft cots should be used only on ball bearing rollers. I don't recommend the use of a soft cot less than 1½ inches long. Here's the reason for that. The difference between the life of a short soft cot and a long type can be mathematically figured out. If you use a cot less than 1½ inches long, there are instances where the life of the cot would be six months. There are other times—depending on the type of frame, the weight, draft and type of cotton—when the cot will last a year, providing you do certain things. If you're using a ball bearing roller and you have a cot less than 1½ inches, and you're doing certain types of work, you would be in line for resanding these soft cots.

Mill D: We use soft cots and like them. They've helped us on our break.

Mill E: We use soft cots and find that we get more even yarns. And we're more interested in evenness than break strength. Our tests have shown that our break strength did come up 100 points. We've tested a number of cots, and we're trying some now that are a little harder than the first we used. It seems to me soft cots give us a much better yarn. We buff every three months except on the first round. On the first round we buff after one month. Our cot cost hasn't increased too much, and we're very well satisfied.

Moderator: Do you have ball bearing rollers?

Mill E: Yes, we do. The 100-point increase we got in break strength is equivalent to about $\frac{1}{32}$-inch in staple.

Do you use creelers?

Moderator: Do any of you use specialists in your spinning room; i.e., a person who does nothing but put up ends; another who does nothing but creel?

Mill F: We have spinners and creelers. We don't block creel.

Moderator: What success are you having on that?

Mill F: We're saving on quality. We use people who were formerly spinners to do our creeling. They can put up the roving with fewer bad places. We have a system for creeling according to yarn size.

Moderator: Did you find any labor saving?

Mill F: Yes, but I can't give you any specific figures.

Mill G: Were your savings on skilled labor?

Mill F: We made our savings in the number of people needed for the job. There's very little difference in creeler and spinner wages.

Moderator: Does your system help you to get creelers and runners?

Mill F: I'd say it does.

Mill H: How do you assign the creeler—so many hours, bobbins per day, or what?

Mill F: It's graduated according to the yarn numbers being made. A particular job might include two, three or five different counts of yarn. The system is based on the running time of the roving in the creel.

Mill D: Do you ever have a creeler get behind?

Mill F: Yes, we do, but you'd have that with your spinner, too. All in all, they do all right.

Moderator: What do your spinners think of the system? Do they like it or would they rather go back to the old system?

Mill F: I think they like it.

Moderator: Is there anyone here on block creeling that uses yardage controls to control waste? We have been on block creeling and we got off just about as fast as we went on due to the reworkable waste.

Mill I: Did you go to block creeling to save waste or to improve quality?

Moderator: Both. We spin on quills and you know how important it is not to have dumbell bobbins, which, in turn, sluff off and tangle in weaving. We went to it to eliminate the creeling factor during the period of a day. It eliminated run-outs and made more uniform quills.

Mill I: Did you piece the frame up running or standing?

Moderator: We pieced it up standing. We don't do any creeling running. We tried it, but ran into an efficiency problem and stayed pretty much out of balance. But there are many, many mills doing it very successfully. I feel it's the thing of the future and it will get us to the place where we can reduce our labor costs and make better quality.

Will a higher break draft increase your breaking strength?

Moderator: Has anyone gone to a higher break draft to attain a better break?

Mill K: We run a 1.18 and a 1.30 on occasion.

Moderator: Has anyone gone any higher than this?

Mill A: We run a 1.26 and have gone as high as 1.55, but there was no advantage or disadvantage. We've always gone back to 1.26.

Moderator: Has anyone run any lower or any higher?

Mill B: We had some at 1.38. We plan to try it again, but we haven't decided just when or what frames.

Mill D: We have had extensive tests on break drafts, ranging from 1.10 to 1.70, testing each one very carefully to find the optimum to give us the best coefficient of variation and break factor. Almost without exception, we came back to the 1.24 or 1.26. There are many things that enter the picture—the roving twist, the size of the roving, the type weight and the type top. We've found through extensive tests that the 1.24-1.26 range has been best for us.

In figuring break draft, is it the same for all types of frames?

Moderator: In figuring break draft, does it make any difference what type frames you have?

Mill G: All of our frames are Whitin frames, but with different gauges. We find that usually the break draft will apply to all of them.

Mill J: I'd like to ask a question that a fellow asked me and I couldn't answer. Will your break factor for a one-inch roll be more or less than that for a ⅞-inch roll? Is there any difference?

Mill B: Yes. We have three or four frames like that and we don't have the same break factor on all of them.

Moderator: What's the reason for that?

Mill B: After many tests, we've found that although there is a slight difference, the factor should remain between 1.20 and 1.30.

Mill C: On break draft, I don't think it makes too much difference what size back roll you've got or what size top roll you've got, or what your gearing ratios show your break draft to be. If you change a tremendous amount in your draft, there's got to be a decided difference. I think that one thing that we might be missing is the amount of weight on the back roll. Is the back roll really holding the stock or is the middle roll and apron pulling it through? If it's pulling it through, you can change drastically and get no difference in your yarn. If it's holding it and there's enough weight on the back roll and you change 20 or 30 points, you're going to get some changes in the yarn. About 20 pounds is a good weight for the back roll. I know that in some plants, you can actually stop and hold the back roll and never knock the end down on a spinning frame. You can change the break draft on that frame drastically and never change the yarn.

Mill D: Don't you also agree that if you change the number of pounds on that 7/8-inch roll, you'll change the rigidity of it?

Mill C: It might.

Have you tried flapper-type revolving clearers?

Moderator: Has anyone here tried the flapper-type revolving clearer?

Mill C: We tried it and took them off.

Mill E: I put it on eight frames and took it off.

Mill H: I have it on 301 frames and I'm going to take it off.

Mill J: I have it on 208 frames and they've been running over three years.

Mill K: We have some where the waste doesn't overlap and they've been running six months without a minute's trouble. They are set wide and on an angle.

Moderator: Have you had any difficulties using floor sweepers in conjunction with overhead cleaners?

Mill C: We've had trouble with floor sweepers catching strings on doff boxes and anything else that is in that area.

Moderator: Have you had any trouble with your overhead cleaners when they stop?

Mill C: No, if they hit a box (which they'd better not do) or a spinner, they stop and then go on when the way is clear.

Moderator: Has anyone had any trouble with bottom steel rolls?

Mill H: If you have proper maintenance, that is adhere strictly to the lubrication charts, breakage should be a minor thing. We haven't had any major complaints. Keeping the needle bearings level is also a must.

Mill I: I think bottom steel rolls are going to be a must with high speeds that we've got to get today. And I also think there will be a greater demand for these rolls with anti-friction bearings, whether they're ball or roller bearings.

Do you run filling wind on the Barber-Colman spooler?

Mill A: Is anyone running filling wind on the Barber-Colman spooler with coarse counts such as sixes?

Mill J: We're running it on fine counts, but certainly not sixes.

Moderator: Is it a trial or is it established?

Mill J: It's established.

Mill A: What stroke do you run?

Mill J: That will vary.

Moderator: What about the sluffing on your particular installation?

Mill J: We're getting good results.

Moderator: Do you spool as fast as you would for combination winds?

Mill J: Yes, we do. It doesn't make any difference.

Mill A: Does the spinning run better on the filling build or the combination?

Mill C: My experience has been that it'll run better on the combination.

Moderator: From the tangled yarn standpoint, I think most of us would like to go to a filling wind. We've tried it, unsuccessfully, and found that as long as the spinning ran good, we could run fairly high speeds on our Barber-Colman spooler. However, when our break went down and our ends-down increased, sluffing became a terrific problem in spooling.

Moderator: Has anyone had trouble winding combination winds on the spooler?

(Continued on Page 77)

Charles Sanford of Leward Cotton Mills served as moderator for the group dicussion on spinning topics.

Be Sure You Select The Proper Sample Length In Measuring Sliver Weight, Roving Size, Etc.

PRODUCT VARIATION CAN GO UNDETECTED IF YOU SELECT SAMPLE LENGTHS AT RANDOM; THIS ARTICLE TELLS WHY

By D. S. HAMBY
School of Textiles
N. C. State College

WHEN measuring certain physical properties of textile materials, the choice of the length of material to be tested is frequently not standardized. Examples of such tests are sliver weight, roving size and lap evenness. In other tests—such as yarn number, strength and twist—there is more than one recognized test method and they generally do not require the same length of test specimen.

For determining levels of quality and variations in quality, the selection of the proper sample length becomes important. This is especially true if the results are to be compared with those of other laboratories or if certain types of production are being studied. Frequently, in quality control programs, product variation is not detected because sample lengths are inadvertently selected such that serious variation is hidden within test specimens.

The variance-length curve[1] is a simple yet fundamental explanation of the influence of sample length on the variation measured. Fig. 1 shows a typical relationship between the length of test specimen, L, the variation within lengths, V_w, and the variation between lengths, V_b. As the length of the test specimen increases, the variation included within the length increases, and the variation between lengths, or from length to length, decreases.

As an example of this effect, assume that a 1,000-yard length of yarn is to be tested for evenness. If the entire length is tested as a unit, the total variation in the 1,000 yards will be measured and will all be considered as within length or simply "within," V_w, variation. The between length variation, V_b, will obviously be zero because there is only one length involved and, therefore, no variation.

If, however, the 1,000 yards were cut into two 500-yard lengths and the two lengths were passed through the evenness test, the V_w would be less than before because there would be less likelihood of having as thick a section and as thin a section in each 500-yard length as there was in the 1,000-yard length. In this case, the V_b would be increased because the values of two 500-yard lengths are now being compared. The magnitude of V_b would be small, but nevertheless it would exist. If this reduction in test lengths continued down to infinitely small lengths, the V_w would approach zero and the V_b would approach the maximum.

The same type of analysis can be applied to the measurement of yarn number. The common skein length for yarn number measurements is 120 yards; however, the Suter Universal Yarn Balance requires a sample length of one yard. If a 120-yard skein were cut into 120 one-yard lengths, and the yarn number of each yard determined on the Suter Balance, a rather substantial amount of variation would be found between these lengths. If, however, the entire 120-yard skein were weighed, as is customary, none of this variation would be measured. The variation found by the 120 one-yard weighings would be V_w, and the variation found in the weight of one 120-yard skein compared to another 120-yard skein would be V_b. If 60-yard skeins were used in place of the 120-yard skeins, the V_w would decrease and the V_b would increase.

Shaikh[2] investigated this problem. Fig. 2 is typical of the results for the singles yarn and plied combed cotton yarn used in the study. The wraps per skein were varied from one up to 15 in increments of one wrap; from 15 to 30 wraps in increments of five and from 30 to 80 in increments of ten wraps. With only one wrap, the skein test was, in effect, a single-end test with a knot, and had a rather high variation in strength. As the number of wraps increase, the variation between breaks decreases. At the same time, the variation within the length was being increased because each increase in one wrap lengthened the skein by 1½ yards. The V_b decreased in the same manner as the V_b curve in Fig. 1, and if the V_w

FIGURE I
TYPICAL VARIANCE LENGTH CURVE

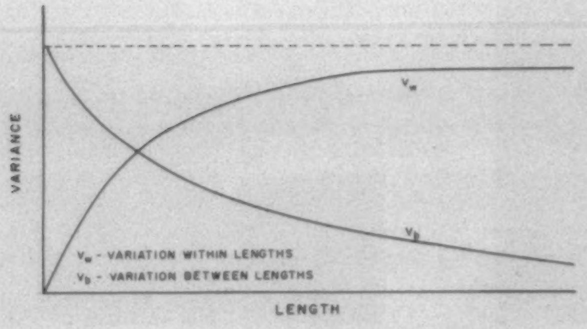
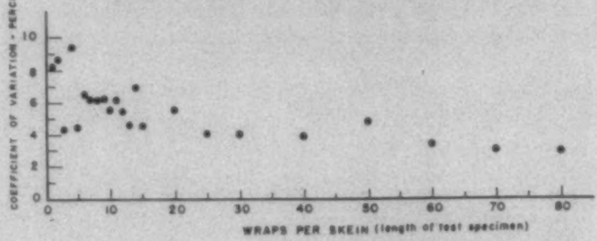


FIGURE II

TYPICAL RELATION BETWEEN WRAPS PER SKEIN AND THE COEFFICIENT OF VARIATION OF STRENGTH TEST RESULTS.



could have been measured,i it would have followed the pattern of V_w in Fig. 1.

Smith[3] studied the influence of sliver length on weight variation within the lengths and between the lengths. In this investigation, the sliver lengths selected were from one yard up to 100 yards. Fig. 3 summarizes the results and the general shape of the curves are the same as shown in Fig. 1. When determining the weight of sliver, especially card sliver, lengths of one, five and fifteen yards are frequently used. If, for example, three different mills used the respective lengths mentioned above and attempted to compare weight variation, how would they compare?

For the mill using one-yard lengths, the variation between lengths would be approximately 5.7%. For the mill using five-yard lengths, the variation between lengths would be approximately 3.5% and for the 15-yard length, the variation would be approximately 2.7%. Without recognizing the influence of test specimen length, a comparison between these mills would obviously be very misleading.

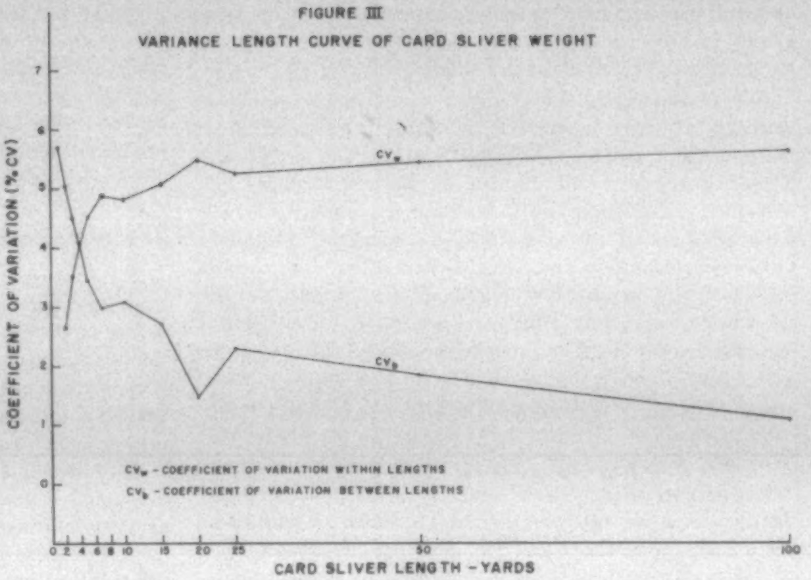


FIGURE III

VARIANCE LENGTH CURVE OF CARD SLIVER WEIGHT

The differences found for different lengths is not constant. The magnitude of the difference (slope of CV_w and CV_b curves) is a function of the amount of variation in the material being considered. A study of comber sliver will show a much smaller change in CV_w than in card sliver as the length is increased. This is due to the more uniform weight of the comber sliver.

REFERENCES

(1) "Variance-Length Curve, Theory, Practical Establishment, Examples," Zellweger Ltd., Uster, Switzerland.

(2) Maqbool I. Shaikh, Unpublished study of "Relation Between Wraps per Skein and Strength for Cotton Yarns," School of Textiles, N. C. State College.

(3) Noel M. Smith, Unpublished study of "Influence of Sliver Length on Weight Variation," School of Textiles, N. C. State College.

An Automatic Temperature And Humidity Control System Is A Must For Maintaining Good Quality

AUTOMATIC CONTROL PROVIDES FOR MAXIMUM QUALITY, HUMAN COMFORT AND GREATER ECONOMY OF OPERATION

By RICHARD T. WAITE JR.*

MEASUREMENT and control in the textile industry must become an accepted necessity if maximum quality is to be had with minimum cost. In the heating, ventilating and air conditioning field it seems that emphasis is placed on the fact that superior measurement and control becomes an unnecessary luxury.

This is not entirely true, and it is significant that the textile industry has been one of the leaders in recognizing this. It can be proven that automatic control of the air conditioning process can, in addition to providing human comfort, provide greatest economy of operation, better control of quality and other benefits. Within recent years, it has been found that the very best in automatic control is absolutely necessary in process areas of manufacturing plants, not only for the process variables but also for the surrounding air conditions.

Generally speaking, heating and air conditioning controls are divided into four broad classifications:

(1) **Self-actuated.** The variable sensing element provides the force necessary to reposition the correcting, controlled device. An example of this is the pressure reducing valve, water temperature regulator. This system is simple, easily installed and inexpensive. However, it is impossible to have very remote location of the sensing device from the control valve. This method is inflexible and does not afford closeness of control required in all cases.

(2) **Electric.** A mechanical means of detecting a change in a variable and electrically positioning the correcting, controlled device. An example is the basic on-off switch. Its advantages include ready availability of power, least expensive of most common controls for widest application and easily used with other electrical equipment. Disadvantages: inherent

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*Carolinas Branch Manager of the Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. An abstract from a paper presented at the A.I.E.E. Electrical Equipment Conference for the textile industry, Raleigh, N. C. November 10-11, 1960.

on-off in nature, often difficult and expensive to obtain modulating or proportioning control, and several cannot be easily sequenced for operation from a single controller.

(3) **Pneumatic.** This is also a mechanical means of detecting a change in variable and using compressed air to position the correcting, controlled device. The nozzle and flapper are examples of this system. Some advantages are: inherently modulating or proportioning, combinations and sequencing are simple and free from operating difficulties. Others are: explosion proof and the total costs are generally less on larger installations. Disadvantages include the fact that it requires a source of clean air, cost of an air compressor may have to be absorbed on smaller installations and it requires good, tight air piping. Occurrence of a leak may render a part of or the complete system inoperative. The system also requires regularity of maintenance to replace air filters, drain condensate and oil.

(4) **Electronic.** In electronic detection, positioning of the correcting, controlled device can be electric or pneumatic, but is generally electric because of the simplicity of adaptation of the measurement to control. An example is resistance wire. Advantages of this system are numerous. Sensitivity, low mass, no hysteresis, little wear and very little maintenance are some features. Others include simplicity, speed, accuracy and reproducibility. To some extent, however, the word "electronic" continues to mystify the general public. Because of the electronic panel, simple systems become costly when compared with their electric counterpart.

Pneumatic Controls Most Widely Used

In the past, pneumatic controls have seen greatest favor and this is expected to continue, particularly in the area of final control elements—valves that control water and steam flows and motor operators that position dampers. Not too many years ago these systems consisted of blind controlling instruments and it was not uncommon to think of ± 3° F. and ± 4% R.H. as being well-maintained conditions for a textile plant. Over the past few years more sophisticated control systems have come into play, and with the use of industrial instruments and specially designed control devices, such as electronic humidity controls, terms of ± 1° F. and ±2% R.H. are reasonable tolerances.

In addition, records have become more generally used. This has led to the requirement for recording of more and more variables. Satisfactory conditions have been, and are being, maintained in the textile manufacturing areas with this type equipment. There appears to be an increasing curiosity as to what results would be obtained by holding even closer conditions.

Physical Testing Labs

More accurately controlled conditions are desirable in physical testing laboratories, and more expensive systems have gone into them. Electronic potentiometers, for example, are used to measure, record and control space conditions. Because most applications are for constant conditions, narrow spans may be used which magnify pen movement and control response. Temperature is measured by a resistance bulb and relative humidity is measured by a similar element, except its resistance varies with changes in R.H. rather than temperature.

These instruments are normally equipped with pneumatic control and operate with air-operated final control elements. The control unit is normally furnished as a wide band (150%) proportional controller to afford greater flexibility of adjustment and automatic reset to compensate for control point offset due to proportional action. Because both space elements are electronic in nature the instruments may be located in any desirable location offering the additional benefits of remote recording, set point adjustments, control adjustments and supervision.

The Automated Plant

We hear a great deal today about automation and the automated plant. There is an increasing curiosity as to what results might be obtained by holding closer conditions than we think of as being acceptable today. I would like to tell you what one of the larger textile firms is doing in this regard because I think you will find it interesting and it also may suggest some ideas for your plant.

This particular firm started a substantial air conditioning program last year. The program called for the very best in equipment, design and installation. The firm wanted the ultimate. But when top management came to the automatic control system, they realized their designs were nothing more than a carbon copy of what had been done for years. The firm was aware of the trend toward centralized control and gave serious thought to this approach. However, after much investigation, and thinking about all of tthe recorder charts to be changed and more importantly that the operator would not know of operating difficulties unless he happened to be at the panel watching the chart records, the firm's chief engineer decided against centralized control. He felt that the operator(s) could ill afford constant supervision of the panel, and without that any malfunction which would show up on a chart record would only be evidence after the fact. In addition, this could go unnoticed from 4 to 24 hours or more.

If immediate detection could be accomplished, this would free the operator for more productive work yet insure corrective action being taken when needed.

A New Concept

By his own analytical procedure, the chief engineer had defined a new concept in the field of automatic control of air conditioning and data handling, which will provide data by typewritten log sheets rather than recorders and also rapid scanning of all the measured variables on a continuous basis with audible and visual alarm from an input outside of preset limits.

Advantages

Following are the advantages this chief engineer outlined to his management in justification of the purchase of such a system:

(1) The best types of industrial control instruments and mechanisms would be employed thus assuring optimum control results at the lowest maintenance and operating expense.

(2) The centrally located control panel with employment of a data logger-scanner would greatly increase operator efficiency by: (a) eliminating the necessity of constant patrolling to search out malfunctioning of equipment; (b) eliminating the problems relating to frequent checks of control instrument and recorder calibrations; (c) relieving of manual logging of refrigeration machine performance; (d) warning of off-normal conditions at the instant they occur; (e) simplifying and speeding up the training of new operating personnel; (f) simplifying the starting and shutting down of the sys-

tems—this would be particularly important in the event of power failure; and (g) eliminating recorder chart changing, pen cleaning and inking and routine maintenance of instruments.

(3) The logged data would be accurate and time oriented. Operator errors would be eliminated. Deliberate operator errors to cover operator mistakes would be eliminated.

(4) The data accumulated by the logger is much more usable and reliable than that accumulated by other means.

(5) In the event of an off-normal condition, the logger-scanner would not only provide a permanent written record, but would also provide a means whereby the operator could get a digitized report of the condition every three seconds and thus watch the trend for several minutes before taking corrective action. This feature adds further to operator efficiency.

(6) Fast, accurate reports made by the logger enable the operator to make sound decisions and thus tend to eliminate trial and error decisions and corrective actions.

Intangible Benefits

The chief engineer also cited the following intangible benefits from the proposed system.

(A) A supervisor would not have to rely fully on information passed on by operators. He could check conditions himself by visiting the central control board or checking the typewritten log sheets.

(B) This type system could be considered as an insurance policy to protect the large investment made in the air conditioning installation by making it possible to get almost 100% capability out of it at all times and, through the use of monitoring all critical items and alarm scanning, to protect against loss of major equipment.

(C) The use of a superior control system would assure that all temperatures and relative humidities would be controlled closely to the desired points with the consequent expectation production machinery efficiencies could be more easily held at highest points.

(D) This type system is being used by other industries making a wide variety of products and is not something new or untried. Newness, if this term is applied, relates only to its use for controlling textile air conditioning systems.

It was also shown that savings in labor alone offered enough return on investment to purchase the system.

A.A.T.C.C. To Locate National Headquarters In New York City

The American Association of Textile Chemists & Colorists has voted to locate its national headquarters in New York City. Since the founding of A.A.T.C.C. in 1921, it has maintained its headquarters at the Lowell Technological Institute, Lowell, Mass. Dr. Louis A. Olney, then head of the department of textile chemistry at L.T.I., was instrumental in founding the association and served as its first president.

Several considerations influenced the council in making its decision to move the national office to New York City. It was believed that the members could be best served from a point more centrally accessible, since a large segment of the membership is found in the Middle Atlantic area. Other advantages cited included the proximity to the association's publishers, the trade press and communication facilities, and the desirability for a metropolitan location with a concentration of technical society headquarters of similar organizations.

Date for the move has not been set.

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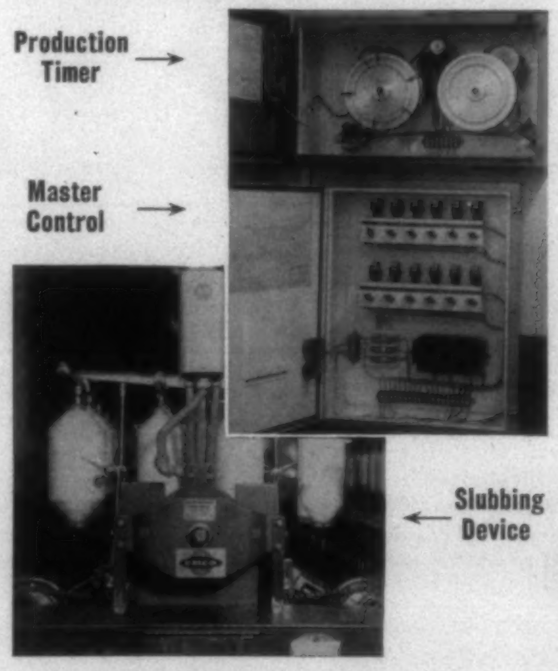

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T.O.E.G. Discuss Opening, Picking, Carding

GEORGIA EXECUTIVES COMMENT ON COTTON QUALITY, S.R.R.L. CLEANER, CARD CLOTHING AND OTHER TOPICS

The Spring meeting of the Textile Operating Executives of Georgia, held April 22 at Georgia Tech in Atlanta, featured discussions relating to opening, picking and carding. Here is a review of the major points of those discussions.

Crop Comparison

Question No. 1—What has been your experience with the 1960 cotton crop with reference to: (a) Micronaire; (b) neps; (c) spinning qualities; (d) yarn break factors; and (e) yarn appearance. What quality control measures have you found effective in overcoming yarn quality faults caused by properties of the 1960 cottons?

	Mills							
	A	B	C	D	E	F	G	H
Micronaire	coarser	same	varies	higher	higher	equal	varies	coarser
Neps	fewer	higher	worse	fewer	higher	same	more	fewer
Spinning Qualities	better	better	same	same	worse	same	lower	same
Yarn Break Factors	better	down	same	same	lower	same	lower	down
Yarn Appearance	better	lower	same	--------	lower	same	lower	same

Several methods have been used by the mills in overcoming quality faults caused by the 1960 crop. These include: changing settings and speeds on cards and pickers; adding twist to the yarn on a few counts; checking by Micronaire and differential dye tests; checking by Pressley and Shirley; and machinery modernization.

SRRL Opener, Blender And Cleaner

Question No. 2—Please give your experience with the new SRRL opener and blender and also the new SRRL cleaner for pickers. Give your staple and grade of cotton as well as the advantages derived.

Mill A: We made one small experimental test, but results were inconclusive.

Mill B: We have two SRRL machines which give much better cleaning. Blending is near perfect on our strict low middling $\frac{15}{16}$-inch.

Mill C: We are pleased with the opening and blending characteristics of our SRRL Opener-Blenders, but are not too happy with the amount of cleaning we are getting, especially trash of the lighter variety. We have no experience with the SRRL cleaner for pickers. Our raw stock is Middling $\frac{15}{16}$-inch and $1\frac{1}{32}$-inch staple.

Quality Control

Question No. 3—What is your experience with automatic weighing mechanisms added to blending feeders running on cotton? (a) Does this device enable you to improve blending and manufacturing performance? (b) Is it possible to blend lower grades in cotton with a wide range of fiber properties and maintain good running quality in the mills?

Mill A: (a) We have six feeders with weighing mechanisms and feel we have definitely improved our blending. (b) We are presently running some of our lower grades on these machines and feel we are getting better running qualities from this mix.

Mill B: (a) The weighing feeders take out the human element and assure us of getting an even distribution from our various mixes. We thus are getting an even blend from day to day which is mechanically controlled. This improves the running conditions in the processes since it does take out the peaks and valleys. (b) By careful evaluation of the end product, it is possible to lower the grades in cotton and use a wider range of fiber properties.

Mill C: (a) This device enables us to improve blending and manufacturing performance. (b) It is possible to blend lower grades in cotton with a wide range of fiber properties and maintain good running quality in the mill.

Mill D: (a) Automatic weighing mechanisms are not used on our cotton feeders. (b) These devices will definitely help manufacturing performance when used in blending for uniform Micronaire and staple length. (c) The use of these devices would give much better running qualities than the same stock with conventional feeders.

Automatic Opener And Blender

Question No. 4—Please give your experience with the automatic opener and blender and automatic blending mixers in the opening room.

Mill A: Most of our experience on automatic opening and blending equipment has been on synthetic fibers. We feel that this type of equipment is a must for successful blending for

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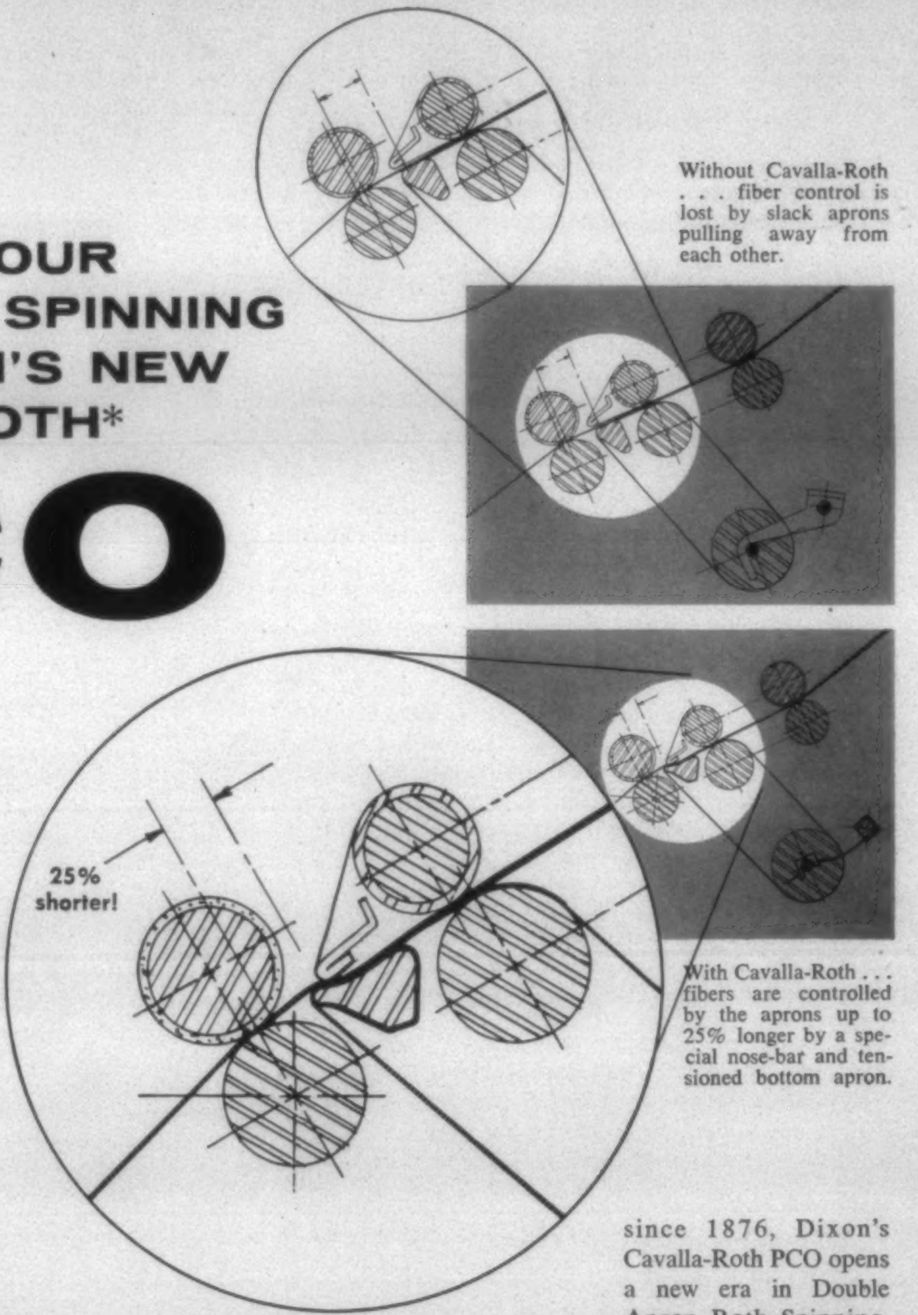

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percentages and/or unrelated fibers. The equipment is also useful in the blending of cotton to a lesser degree, depending, of course, upon quality of end product desired.

Long Pneumatic Lap Control

Question No. 5—Give your experience with the Long pneumatic lap control system with both calender section and counter section.

Most of the mills reported that lap weights had been increased from 40 to 50 pounds to 70 to 80 pounds with the pneumatic system. However, existing pickers had to be modified because of the tremendous strain put on calenders, picker sides and bearings. These problems were remedied by use of steel gears instead of cast iron and steel rolls, along with the building up of picker sides.

Quality Control

Question No. 6—What has been your experience with the various types of new clothing material for card flats? Please give type tried and advantages and results obtained.

Mill A: We have approximately 35 sets of split top, hardened wire flats. We grind these each 90 days compared with each 15 days on conventional flats. We have also had a 19% reduction in neps. We have one set of Nemo metallic flats that has been in production one year, nine months; and one set of Ashworth metallic that has been in production one year, three months. These two makes are similar in construction and are never supposed to be ground. The nep count on these flats is about 11% higher than conventional.

Mill B: We are trying three types of new clothing materials for flats. They are: (1) the short cut type; (2) the interval, or split type; and (3) the metallic type. Tests thus far have shown a reduction of card neps by all three types as compared with our conventional flats. The short cut type is the best of the three in this respect. All three produce a lower quality flat strip, and also a slightly lower percentage of flat strips. The metallic type gave the lowest percentage of strips. They do not load as badly when running a cotton-synthetic blend and allow a longer grinding cycle. (Increase from 17 days three shifts for conventional, to 90 days three shifts for the new type.)

Mill C: We use short cut top flats made by Sykes Bros. With these flats we increased time between grinding 100%. Based on actual studies, we reduced flat waste 20%.

Mill D: We have a set of Eureka flats that were installed in February 1961. The web appearance is somewhat improved. No other data available.

Mill E: We have tried split flats by two suppliers. The nep count was reduced 18% and flat strips reduced 21%. We also tried a solid flat, but prefer split top due to improved nep count. We also tried another manufacturer's solid flat and found the nep count increased while the break factor was reduced 12%. We found that this flat will shed back on to the cylinder which causes the above trouble.

Mill F: We have installed two sets of the split top type flats with hardened point wire. Preliminary tests indicate that we are getting some fewer neps with considerably less grinding required than on standard type flats.

Mill G: Use regular hard point wire—have been running over 1½ years without grinding.

Metallic Card Clothing

Question No. 7—What has been your experience with metallic card clothing?

(See Chart Below)

Most of the mills answering the questionnaire reported that chokes increased slightly. Remedies for this problem included anti-choke wiskers and rubber fins on the doffer and cylinder. Mills using factory repairmen for any troubles they might encounter out-numbered mills using plant personnel by five to three. The general opinion was that when using metallic clothing, it's better to bolt feed rolls down.

High Speed Drawing

Question No. 8—Please give your experience with high speed drawing. (a) Type—whether metallic or cushion rolls; (b) production in feet per minute; (c) deliveries per frame; (d) weight of sliver fed and delivered; (e) size of can in creel and under coiler; (f) deliveries per operator; (g) frame efficiency; (h) any problems or difficulties; if so, what nature? (i) sliver variation; (j) effects in yarn tensile and variation as to conventional speed drawing.

Mill A: (a) Cushion rolls. (b) 400 feet per minute. (c)

	Mills							
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Card Rate Lbs./hr.	14	12.3	12.5	15	7	1.75	15	same
Grade Staple Cotton	SLM _______	SLM 1-1/16″	SLM 1″	SLM 1-1/32″	SLMB 1″	_______ 1-1/32″	synthetic 2″	varies _______
Production Increase	none	higher	none	5.2 lbs.	none	none	25%	none
Nep Reduction	40%	50%	10% less	33%	23%	yes	_______	50%
Waste Reduction	lower	lower	lower	lower	lower	higher	lower	higher
Strip Cycle	121 cards 10 days	120 hrs.	weekly	weekly	120 hrs.	40 hrs.	when load up	weekly
Cards Per Grinder	81	_______	35	no change	_______	_______	double	55

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Four deliveries per frame. (d) 65 grain fed and 65 grain delivered. (e) 18x42 in creel and 16x42 under coiler. (f) 32 deliveries per operator. (g) 58 to 65%. (h) Roller laps have been biggest problem. (i) Average 3.5% non-uniform on Uster tester. (j) Breaking strength better.

Mill B: (a) Metallic. (b) 275 feet per minute. (c) Five and six. (d) 60 grain. (e) 12x36, 14x36, 15x42. (f) 35. (g) 70%. (h) Yes. Considerably more shedding of short fibers causing loading on clearer and more slicks fed into sliver. (i) Varies from 57 to 62 in weight. (j) No significant change.

Mill C: (a) We have 264 deliveries of high speed drawing equipped with cushion type rolls. (b) 340 feet per minute. (c) Eight. (d) 62 grain fed on breaker, 64 delivered on finisher. (e) 16x42 can in creel and under coiler. (f) 48 deliveries per operator. (g) Approximately 74% efficiency. (h) The largest problem we have is with the sliver separating and folding back at the fly frame, also, some collections of clearer waste in the pneumafil on the frames. (i) Sliver variation 2.80%. (j) We feel that the yarn is definitely better compared to our conventional frames.

Mill D: (a) We use 4 over 5 with cushion rolls. (b) 422 feet per minute. (c) Four deliveries per frame. (d) 60 grain sliver fed and delivered. (e) 18x42 in the creel and 16x42 under the coiler. (f) 32 deliveries per operator. (g) 66%. (h) We have experienced difficulty with the sliver being thrown out the side of the can when starting up after doff. (i) We experienced an improvement in our sliver variation and improved from average even to very even or from 5 to 3.75% variation. (j) We experienced an improvement in yarn tensile and in yarn variation.

Mill E: (a) Saco-Lowell Versamatic; cushion rolls. (b) Breaker—315 feet per minute; finisher—300 feet per minute. (c) Four deliveries per frame. (d) Card sliver weight is 56 grains through breaker; 58 grains delivered; finisher is 58 grains fed and 60 grains delivered. (e) 15x42 in breaker creel; 16 under coil. (f) 32 deliveries per operator. (g) 88%. (h) No problems or difficulties. (i) 3.3%. (j) Not known.

Mill F: (a) Our high speed drawing is the cushion roll type. (b) 300 to 400 feet per minute. (c) Eight deliveries per frame. (d) 65 grains fed and 65 grains delivered. (e) All of our coiler cans are 16x42. We are running three sizes of cans in the creel, 14x42, 16x42 and 18x42. (f) 32 deliveries per operator. (g) 70% efficiency. (j) We have been able to reduce our average per cent sliver variation by approximately 10% with the high speed drawing. (h) We have had no major difficulties or problems. (j) There has been very little improvement in yarn tensile and variation, but the yarn strength seems to be more uniform. Charts on single end breaks are smoother on the high speed drawing.

Mill G: Our plant is equipped with Whitin M-2 drawing, giving us satisfactory results. (a) Equipped with cushion rolls. (b) Producing 400 feet per minute. (c) Four deliveries per frame. (d) Breaker creels are fed 61 grain sliver producing 70 grain breaker sliver. Finisher creels are fed 70 grain breaker sliver producing 70 grain finisher sliver. (e) Breaker creels have 18x42-inch cans. Breaker coilers have 16x42 cans. Finisher creels have 16x42 cans. Finisher coilers have 16x42 cans. (f) Assignment consists of 32 deliveries per operator. (g) We do not have representative efficiency figures since we are not utilizing all of our drawing to the fullest at present time. (h) No particular problems other than those normally expected with any drawing. (i) Sliver variation is as follows: Breaker C.V. within machine 1.55%, overall 1.63%. Finisher C.V. within machine 1.30%, overall 1.39%. (j) Drawing variation is 50% less, but we cannot evaluate tensile as applied strictly to drawing since many other changes were made in conjunction with this program.

Mill H: (a) Cushion rolls. (b) 600 feet per minute. (c) Four. (d) 60 grain. (e) Breaker 12-inch can, finisher, 16-inch. (f) 14 deliveries breaker, 24 deliveries finisher. (g) 70%. (h) Stop motion on top rolls—this has been corrected. (i) 16 to 25% on Brush tester. (j) Much better. Previous to this installation, we only had one process drawing.

Revolving Clearers

Question No. 10—Do you have revolving clearers on your roving frames? If so, do the rolls get any dirtier than with conventional clearers? Do the clearers gather lint and do you have any trouble with roll laps? What type material do you use for clearer covers?

Mill A: Yes. We have trouble with the lint not laying on the clearer cover properly. We do not have any excessive roll laps. Regular clearer cloth.

Mill B: We have revolving clearers on roving frames. Rolls do not get any dirtier than conventional clearers. No trouble with roll laps. Regular clearer cloth used to cover clearers.

Mill C: We have four roving frames equipped with a trial installation of revolving clearers. The clearers we are using are the diagonal synthetic flipper type. We have found that the rolls do not get any dirtier than with conventional clearers. We do not have trouble with roll laps. The clearers do collect some lint, but this mostly happens on rough or broken places on the flippers. The use of overhead traveling cleaners prevents most lint accumulation.

Vari-Pitch Roving Frame Builder

Question No. 9 —

Please give your experience with the Vari-pitch roving frame builder.

Mills

	A	B	C	D	E
Gauge	10"	10"	———	7½"	———
Type	Whitin 12x6½	Whitin	12x6 S. L.	10x5 Whitin	10x5 S. L.
HR.	.60 & .90	.60, .90, 1.25	.65	1.15	1.00
Type Flyer	standard	Reiter	standard	Whitin & Maier	Standard
Weight Increase	10 oz.	6½%	none	higher	18 to 23%
Difficulties	none	some	none	yes	no
Tangled Roving	same	30% up	way up	over 100%	decrease

Mill D: Discarded all revolving cleaners. Are not satisfactory on roving frames.

Mill E: We use revolving fin-type clearers on front line of rolls and cloth covered revolving clearers on back rolls and aprons. The rolls get dirtier than with stationary flat clearers. There has been no particular trouble with roll laps. The front clearers are rubber covered fin-type and the back clearers are cloth covered napped type.

Mill F: We only have revolving clearers on our FS-2 roving frames. These are on the front roll only. Our rolls do not get dirtier than conventional clearers. We have very little trouble with roll laps. Our material for clearers is wool cloth with the short nap.

Mill G: We have some frames with revolving clearers and they do not keep rolls as clean as flat clearers. They gather lint and we have some roll laps. We use regular wool clearer cloth.

Mill H: Use Sta-Clean revolving clearers, gather little lint, rolls do not get any dirtier than with conventional clearers.

Eureka Half Laps

Question No. 11—Give your experience with Eureka half laps on combers.

Only one mill answered this question. It reported that it was operating three combers with the Eureka half lap and has reduced noils by some 20%. All laps run on these combers were prepared on sliver lap machines. While not increasing quality, the mill has maintained it with a subsequent decrease in noils. The mill reported that it had not run the half laps long enough to determine life, but expects them to last at least twice as long as conventional half laps.

Quality Control

Question No. 12—What method do you use to prevent laps from splitting on combers? Please give following data: (a) temperature and relative humidity in your comber room; (b) type combers used; (c) pounds of pressure on lap racks; (d) ounces per yard per lap; (e) net weight of lap. (f) Are you able to eliminate lap splitting or minimize it?

Mill A: We have had trouble with comber laps splitting, but we do not have a solution to the problem. (a) Temperature 90°, relative humidity 55%. (b) Saco-Lowell Model 50. (c) 60 pounds of pressure. (d) 800 grains per yard. (e) 30 pounds. (f) We have not been able to eliminate lap splitting.

Mill B: (a) 50% RH, 88° F. (b) Nasmith. (c) 50 pounds. (d) 650 grains per yard. (e) 25 pounds. (f) We encounter very little difficulty on split laps with sliver lap preparation.

TORTURE TEST FOR NYLON CARPETING was conducted recently with this Model A by a Houston, Tex., carpet dealer. Edward J. Knebel, owner of the Village Carpetland in Houston, wrapped strips of Wunda Weve's Random and Lyric Carpeting around the wheels of the car and drove it 238 miles to Corpus Christi. The carpeting, which is of Chemstrand Cumuloft nylon, is said to have shown little wear with 90% of the original yarn retained.

Mill C: We installed round rods over the lap plates for the laps to pass over after leaving the lap rolls. (a) 80° F. and 58% relative humidity. (b) Models 50 and 52 Saco-Lowell. (c) 40 pounds pressure. (d) 827 grains per yard. (e) 20 pounds net. (f) We have only a small amount of lap splitting.

Traveling Floor Cleaner

Question No. 13—State your experience with the vacuum trunk type traveling floor cleaner.

The general opinion reported by the mills indicated that floor sweepers do a very efficient job of cleaning the floors except around the collection bin. The reason given for this discrepancy is that the vacuum gets clogged towards the end of the cycle and can't pick the lint up. Maintenance costs and problems are extremely high as reported by the mills. Also, the unit is cumbersome and causes traffic jams in the spinners' alleys.

Duo-Roth Drafting

Question No. 14—Outline your experience with bottom aprons on Duo-Roth drafting systems.

	Mills						
	A	B	C	D	E	F	G
Apron Thickness	.032	.030	.040	.040	.050	.040	.040
Type Apron	synthetic	synthetic	synthetic	synthetic	synthetic	synthetic	synthetic
Apron Life	3 yrs.	1 to 1½ yrs.	———	2 yrs.	———	1½ yrs.	2 yrs.
Problems	none	none	cracking	stringing	none	cracking	none
Clean Aprons	wiping	washing	blow off	washed	clearers	picking	washing

Do You Have What It Takes To Be A Supervisor?

PART 3

By WILMER WESTBROOK

How would you as a weave room overseer choose a second hand? Here's a case in point. Beaver Mills must choose a second hand for its weaving department. It has three possibilities—it can pick a man with supervisory training but without experience on the job; it can pick a man with experience on the job but without supervisory training; it can go outside and bring in a second hand with experience and supervisory training. What would you do?

BEAVER MILLS needed a second hand in the weaving department so the overseer, the superintendent and the assistant superintendent held a conference to decide upon a man for the job.

"I'd like to give the job to Bert Waters," announced the overseer. "He's been in the department a long time, knows all the employees and is experienced in all phases of the operation."

"I have two objections to placing Bert on the job," said the assistant superintendent. "He has worked with the employees and they will not regard him and his authority as a supervisor with proper respect. In turn he may be too lenient and easy-going with his former fellow-workers—I suggest that we put the trainee, Jones, on this job."

"You are wrong about the workers' attitude," argued the overseer. "They realize that Bert knows the job and they will co-operate with him. They would rather have one of their fellow-workers promoted to the job than to have a stranger for a supervisor."

"Why do you think the trainee will be the best man for the job?" the superintendent asked his assistant.

"He has a college degree in textiles, has worked and gained experience in all departments of the mill, knows the rudiments of weaving, and will do a good job as second hand because it is a stepping-stone to a better job for him."

"I disagree with you," said the overseer. "With his college education he won't be able to speak the workers' language; his experience in other departments will be a handicap because he'll want to try things in weaving that won't work regardless of how successful they are in carding and spinning.

"Knowing the rudiments of weaving is not enough—he needs plenty of experience as a weaver and loomfixer before he can run the job properly. As for the job being a stepping-stone, that's just how he'll regard it—he'll push the men and machines for a short-time record, knowing that he will be promoted to a better job before the dissatisfaction of the workers and the run-down condition of the looms causes a drop in production and a big increase in seconds!"

"Then what do you think of hiring an experienced supervisor from another mill?" the superintendent asked. "We have several applications on file."

"That would not be fair to our own men," countered the assistant superintendent. "If we didn't have anyone that was qualified for the job I'd say yes, but to bring an outsider into the mill would not only be resented by Bert and the trainee, but also by some of the workers."

"You're right," agreed the overseer. "It would destroy ambition and hurt morale. However, under some conditions it helps to bring in an outstanding supervisor from another mill. A new man often brings in new ideas and shatters the complacency of the employees who depend on seniority alone for promotion."

"Let's summarize our thinking on the subject and see if we can reach a decision," suggested the superintendent.

"First, our local boy, Bert, has these advantages:

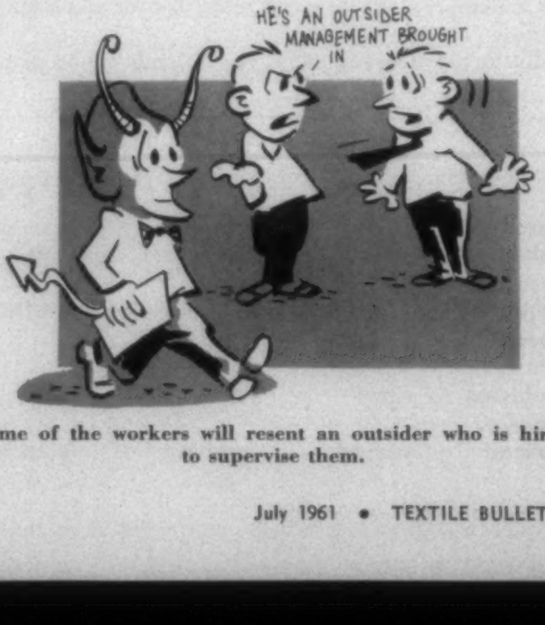
"He is already in the department; we know he is reliable, capable and experienced; his promotion would be an incentive to others to work for a better job.

"On the other hand, he has the disadvantage of having no supervisory training or schooling; will be supervising those with whom he formerly worked; and will probably have a hard time enforcing rules. He may not be able to command the respect of the employees—in fact, the promotion may give him a swelled head and cause him to become conceited and overbearing.

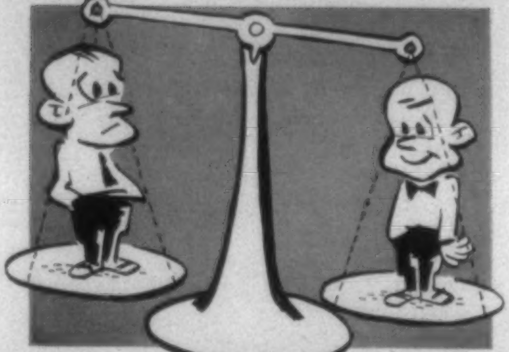
"The trainee has received special schooling and training to fit him to a supervisory position. This job will be a further means of giving him training and experience. It will also show if he has the necessary qualities for a more responsible job. But his appointment could be resented by Bert and by the workers he would supervise. His lack of experience in the operating details of the job could also cause him to make some mistakes.

"Hiring an outsider who is fully qualified and experienced would be the quickest and easiest way to solve the immediate problem. But such a step might cause complications later by destroying incentive and could cause resentment.

"Well, let's weigh all the alternatives and come to a decision!"


HE'S AN OUTSIDER MANAGEMENT BROUGHT IN

Some of the workers will resent an outsider who is hired to supervise them.



Carefully weigh the faults and virtues, the assets and liabilities of each candidate for a job.

What would you do? After checking over the good and bad points, the strengths and weaknesses of each candidate for the job, which would be your choice?

Beaver Mills settled it this way—and time has proved its decision to be a wise one:

Since it had two well-qualified men in the organization, the possibility of hiring an outsider was dismissed. Then Bert and the trainee were called into the office for an announcement.

The trainee was to get the supervisory job, but it was only a temporary arrangement since management had other plans for him once he had gained the necessary mill experience.

Bert was to spend some of his time with the new supervisor as an assistant to help him with the mechanical details of the job. He was also to learn all he could about the supervisory duties so that he could take over later. In this way Bert and the new supervisor would help each other, each would be learning from the other and the entire job would be strengthened.

The selection of a new supervisor often presents problems which, if not handled wisely, may have repercussions for years to come. When you put an untried man in a supervisory position you are not only taking a chance with the job itself, but also with the future of the new supervisor and some of his subordinates.

If the wrong man is selected he may so upset the department that some of the best employees may quit. The new man can be a good loomfixer or section man but a dud as a supervisor. Rarely will such a man accept a demotion and return to a fixing job after failing as a supervisor, so you will lose him, too.

So it is best to weigh all the possibilities carefully before a selection is made and then, when possible, place a new man on the job for a trial period before final commitment is made.

Piedmont Section Of The A.A.T.C.C. Is Split Into Three New Sections

The last meeting of the old Piedmont Section of the American Association of Textile Chemists & Colorists was held recently in Asheville, N. C. The Piedmont Section is being divided into three new sections—the Piedmont, North Piedmont and Palmetto. Nominating committees have picked V. B. Holland, Cannon Mills, Kannapolis, N. C., for chairman of the Piedmont Section; and Neal Truslow, U. S. Rubber Co., Winnsboro, S. C., for chairman of the Palmetto Section. No nomination was made for the North Piedmont Section.

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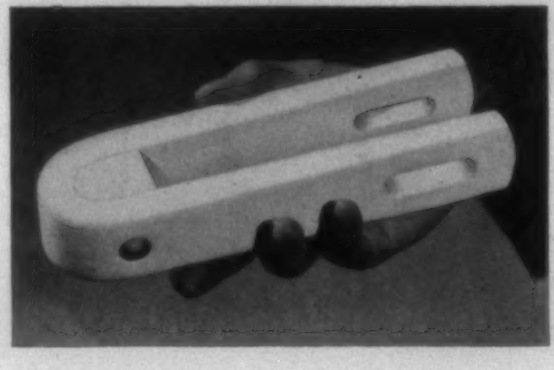

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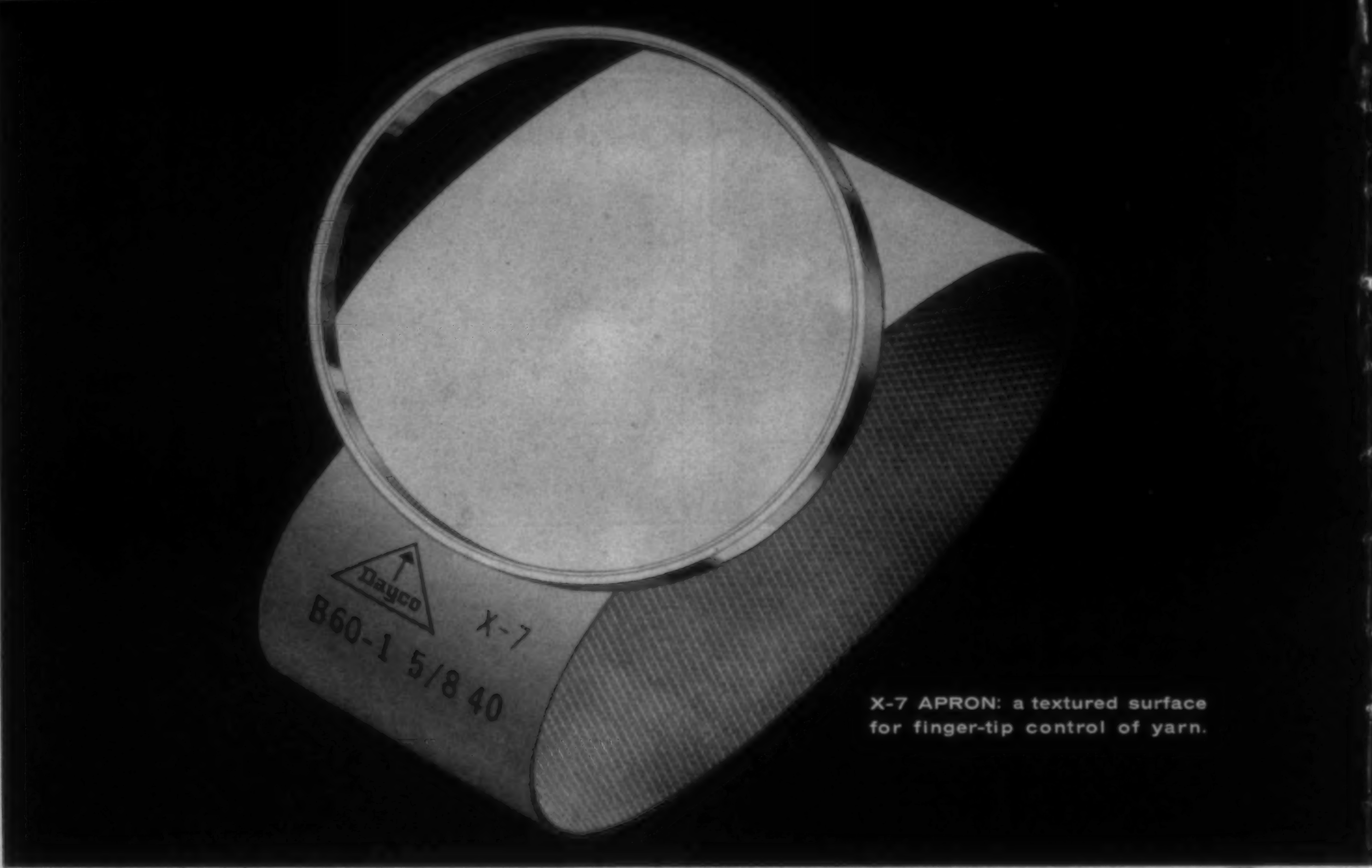
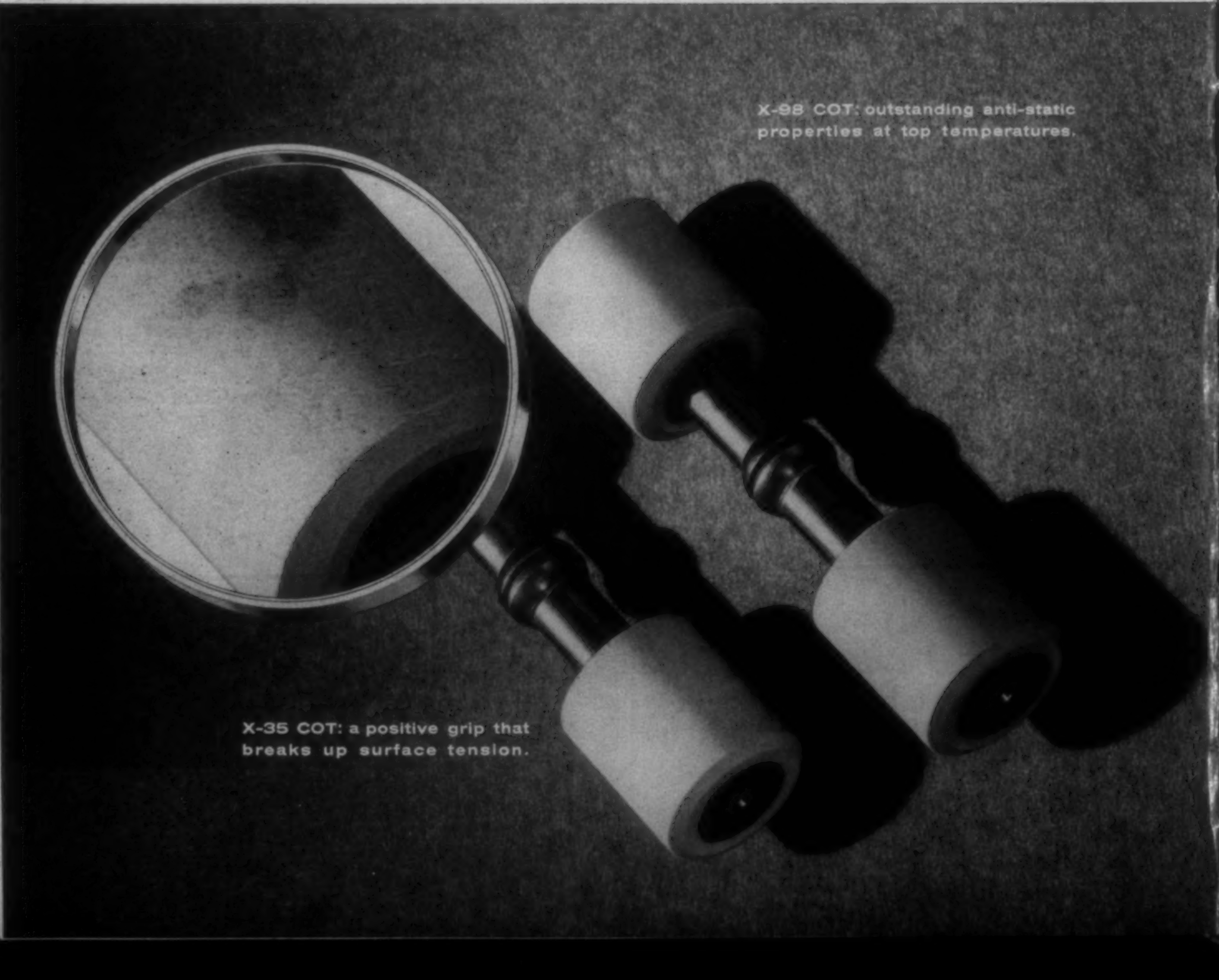


X-7 APRON: a textured surface for finger-tip control of yarn.



X-98 COT: outstanding anti-static properties at top temperatures.

X-35 COT: a positive grip that breaks up surface tension.

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It offers exceptionally high resistance to ozone checking as well as lengthwise cracking caused by flex. Its resilience and sturdiness are equally impressive, enabling the Dayco X-7 to meet, fully and satisfactorily, the demands of modern drafting.

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How To Design And Lay Out Multiple Fabrics

MULTIPLE FABRICS RANGE IN COMPLEXITY FROM PILLOW TUBING TO TRIPLE CLOTHS FOR OVERCOATINGS

By E. B. BERRY

PART 1

This is the first of a series of articles dealing with the designing and layout of multiple fabrics—fabrics made of two or more distinct cloths bound or stitched together during the weaving. These fabrics may be double, triple or even quadruple. Some of the more common types of multiple fabrics are: pillow tubing; fabrics that open to twice the woven width; double cloths for raincoats; triple cloths for overcoating; fabrics that open out three times the woven width; and double plains. In this installment we will consider pillow tubing and fabrics that open to twice the woven width.

THE *Callaway Textile Dictionary* defines pillow tubing as: "A cotton double cloth made with a double plain weave. It is woven so that the two cloths are stitched together only at the selvages, forming a tubular fabric. Yarns and constructions are similar to muslin sheeting. The cloth is made into pillow cases by cutting to the required length, seaming up one end, while hemming the other and leaving it open."

By double plain weave is meant two layers of fabric, one about the other, each woven with a separate warp and filling, and the weave for each fabric being plain. The selvage is merely the stitching or binding point, and not the conventional selvage we find on a print cloth or broadcloth.

Double cloths are generally made in the ratio of 1 face end to 1 back end, and 1 face pick to 1 back pick. This is true when the weights of both layers of fabrics are the same, and the same yarn numbers are used. In the case of a heavy double cloth overcoating which may use a fine worsted face yarn and a coarse woolen back yarn, the ratio may be 2 face to 1 back, in both warp and filling direction. This will require a pick-and-pick loom to insert the filling in the proper sequence.

In the fabric, there are two layers of ends and two layers of picks. This presents a problem in showing the weave on design paper. It is impossible to show one end on top of another on paper, so the ends are placed side by side, and alternated face and back, when the ratio is one to one. The same is done with the picks.

The following illustration is used to show the development of the weave for a pillow tubing.

Fig. 1 is the legend explaining each symbol used in the weaves. Fig. 2 is the weave that is wanted for the face fabric, while Fig. 3 is the weave that is wanted for the back fabric; in both cases, plain weave. It is almost impossible to keep in mind which are face ends and back ends or face picks and back picks, so the back ends and back picks are merely identified with a dot in the center of each square, as seen in Fig. 4. Note, this is not the weave. It merely shows that the warp and filling are both arranged 1 face, 1 back.

LEGEND

⊡ = BACK END or BACK PICK

■ = RAISER FOR FACE FABRIC

⊠ = RAISER FOR BACK FABRIC

☐ = SINKER FOR FACE or BACK

Fig. 1

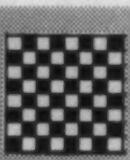
Fig. 2

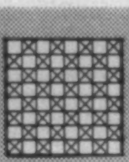
Fig. 3

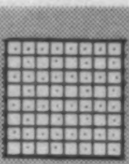
Fig. 4

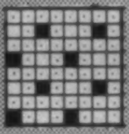
Fig. 5

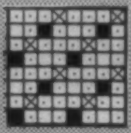
Fig. 6

The next step is to paint the face weave on face ends and face picks. This is done in Fig. 5 and uses the plain weave from Fig. 2. The back weave is then added, and painted on back ends and back picks as seen in Fig. 6, which uses the plain weave from Fig. 3.

At this point, there is no pillow tube. The loom does not know we want alternate ends and picks to be in the back. Merely calling them back on design paper will not place them in the back fabric. The weave shown (Fig. 6) will produce a 1 up/3 down 45° right hand twill. Steps must be taken now to make two fabrics, face and back.

On a Draper loom, the shuttle always travels in the same plane, on the race plate, so it is impossible to have 2 sheds formed, one above the other to form 2 separate fabrics that way. It is necessary to form different sheds, so that when one pick is thrown, it will wind up in the top fabric, and when the next pick is thrown, it will be placed in the bottom fabric.

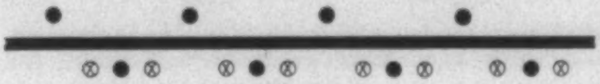

Fig. 7

When the pick is thrown that will ultimately be placed in the top fabric, it is necessary to lower or sink all the bottom fabric ends. This is seen in Fig. 7. Here *all* the ends that are designated as back are in the bottom shed. The ends that are designated as face, weave plain with the pick just inserted. This shed will place this pick in the top fabric, for it does not interlace with the back ends at all. On design paper, a down or sinker, is an unpainted block. Therefore, without any additional painting, the back ends are automatically down, when the pick is thrown that will ultimately be placed in the top fabric.

To place a pick in the bottom fabric requires the reverse treatment. Here it is necessary to raise the top fabric ends, as seen in Fig. 8. *All* the ends that are designated as top are in the top shed. The ends that are designated as back weave plain with the pick just inserted. This will place the pick in the bottom fabric, for it does not interlace with the face ends at all. On design paper an up is a painted block, so it is necessary to raise face ends over back picks in order that the back pick will eventually be placed in the back fabric. Fig. 9 shows this step.

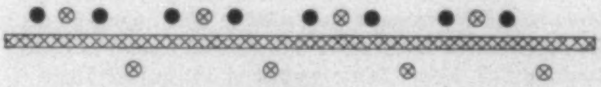

Fig. 8

Under the weave is shown the drawing-in-draft. It requires 4 harnesses to weave, but is seldom made a straight draw. Rather, the face ends are drawn in on the first two harnesses while the back ends are drawn in on the two back harnesses.

Four picks are needed per repeat. This is within the realm of a cam loom, and most pillow tubing is woven this way.

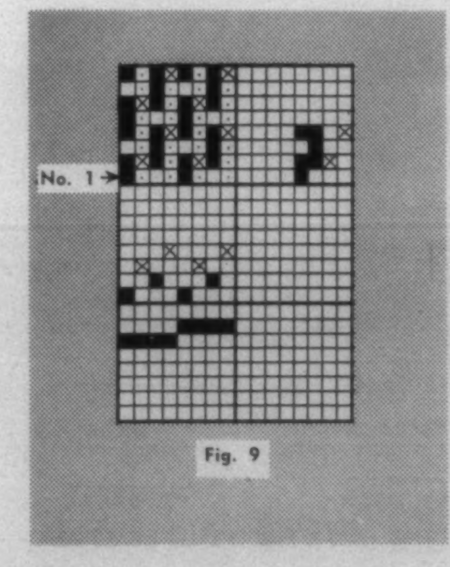

Fig. 9

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Four ends are put in each dent. This does not crowd, for there are really 2 planes of ends. Also shown is the cam plan.

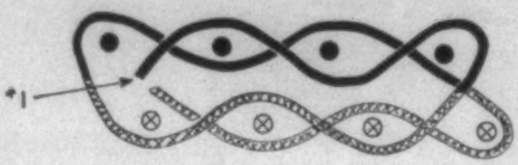

Fig. 10

To illustrate that this is a true pillow tube, Fig. 10 is a cross section of this fabric, cut parallel to the filling. The face ends weave plain with the face picks, and the back ends weave plain with the back picks. There is no stitching.

The two layers are bound together at the sides only. This is accomplished by the face pick going to the back fabric on the right, and the back pick going to the face on the left as seen in Fig. 11. Thus, it is the sequence of 1 face—1 back in the filling without any binding of stitching points which makes a pillow tube.

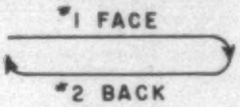

Fig. 11

There is one defect in this fabric. On the extreme left, the first face end and the first back end weave alike. This creates a flat which will show up in the fabric. An easy way to overcome this is to add one extra back end to the total warp. Note it is *not a back end added to each repeat.* Thus, if there are 2,000 ends in the total warp which made the flat, 2,001 ends would correct the flat. Fig. 12 is the corrected weave, while Fig. 13 is the cross section, showing a perfect joint at the left.

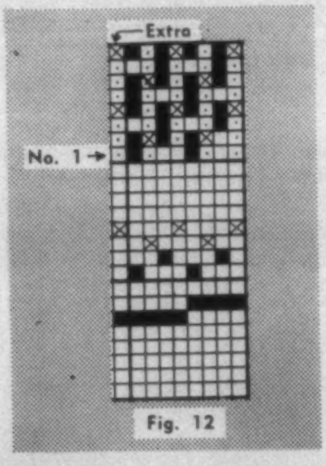

Fig. 12

Such tube fabrics may be woven on a cam loom, but there are problems connected with the weaving. A typical construction for a fabric that will be woven for a pillow case is 22", 6.77 yard 96 × 108. 38/1 × 42/1. This is a percale type and uses combed yarns in both warp and filling. This fabric has a K_1 of $\frac{(96)}{(\sqrt{38})} = 15.6$ and a K_2 of $\frac{(108)}{(\sqrt{42})} = 16.7$ which makes it a firm, good quality fabric. The 96 sley refers to each layer, which means there must be approximately 192 ends per inch of 38/1 yarn on the loom beam. (Not figuring filling contraction.) Theoretically only 166 ends of 38/1 cotton will lay side by side without crowding. Putting 192 ends per inch of 38/1 on a loom beam will present a problem in slashing as well as weaving.

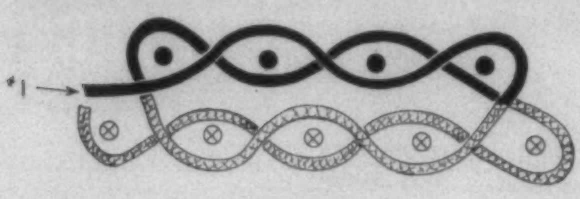

Fig. 13

The 108 picks per inch of 42/1 cotton yarn refers to each layer. In order to get one inch of pillow tube off the loom, 216 picks must be thrown. This means a very slow take up, with the ends moving through the heddles and reed at a very slow rate. Chaffing occurs here, and may be responsible for excessive ends down, which will lower the weaving efficiency.

Double-Width Fabrics

From time to time, a mill is called upon to weave fabrics that are wider than their looms. For example, a mill may have worsted looms capable of making 60" suiting fabrics. They are contemplating going into the bed blanket business, requiring "off loom" fabric widths of 98 inches. There is money available in the company to purchase wider looms, if they can make a successful entry into the blanket field. To buy one loom 110 inches wide, to weave a sample would not be practical. Instead, they can weave their blanket sample 98 inches wide on a loom that is only 60" wide. Blankets are not always plain weave, but for simplicity, the plain weave will be used in this illustration.

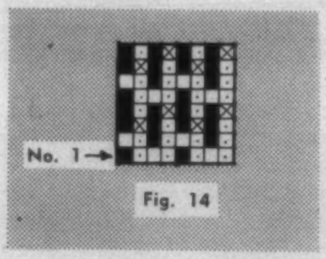

Fig. 14

Fig. 14 shows the weave that will produce a fabric that will open out to two times the woven width. Both the face and back weave are plain, but it is not a pillow tube as in the previous illustration. The cycling of the filling governs whether it will be a tube or hinge and open out. In this case, the filling is arranged 2 face—2 back. Before the weave is started, it is possible to sketch out just where the hinge will be. Fig. 15 (a) starts one face pick from the left, then the second pick is also face. The third pick is in the back and the fourth also is in the back. As can be seen, the hinge here is on the left. Fig. 15 (b) starts 1 face pick from the left,

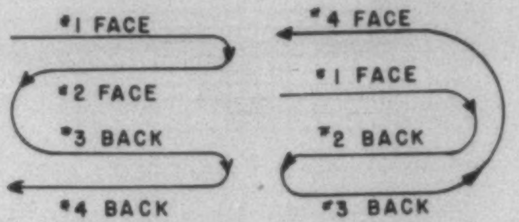

Fig. 15

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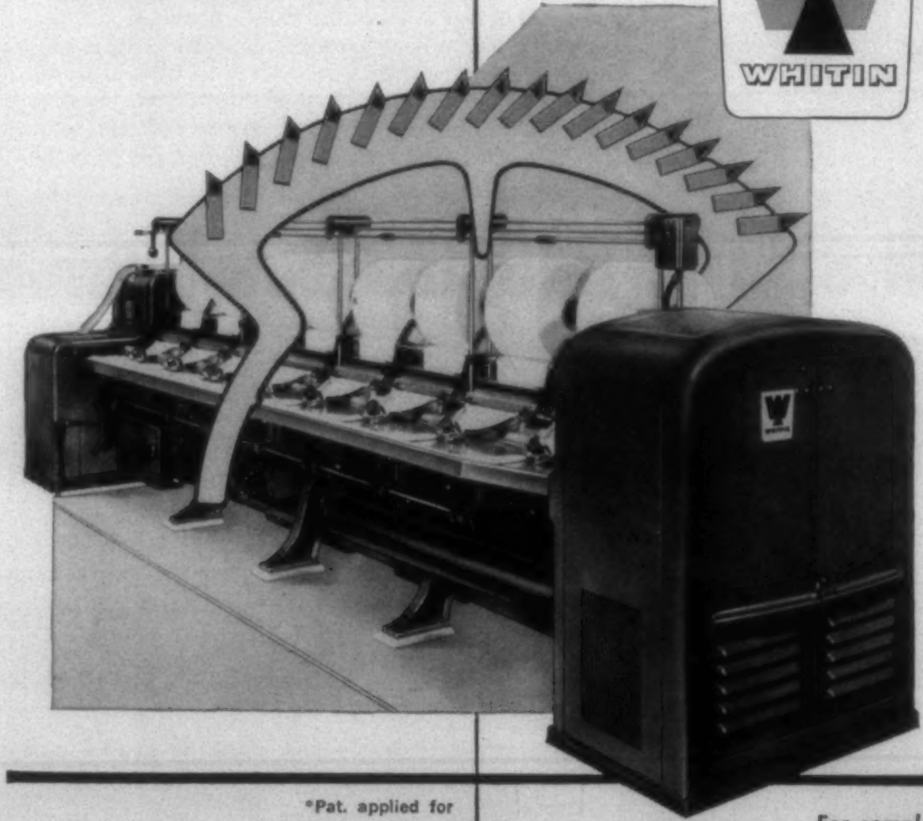

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the second pick goes to the back, followed by the third pick which is also back. Pick number four is face which completes the cycle, and puts the hinge on the right.

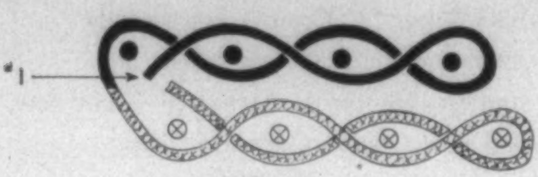

Fig. 16

Fig. 16 is a cross section cut parallel to the filling of the weave in Fig. 14. This has one objection, as a flat is developed on the left hand side, just as in the first pillow tube. One simple way of overcoming this is to start the plain weave for the back fabric with a sinker instead of a raiser, as shown in Fig. 17. A cross-section of this weave, cut parallel to the filling is seen in Fig. 18.

Another way of overcoming the flat is seen in Fig. 19. The sequence of filling here is 1 face—2 back—1 face. This puts the hinge on the right. Fig. 20 is a cross section cut parallel to the filling of the weave in Fig. 19.

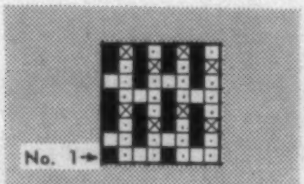

Fig. 17

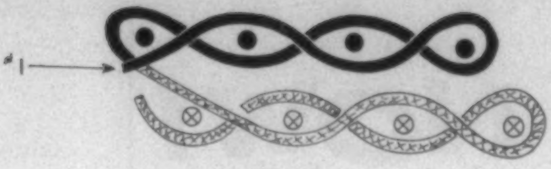

Fig. 18

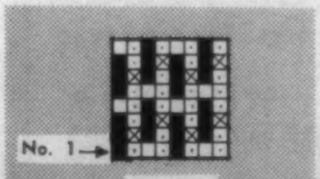

Fig. 19

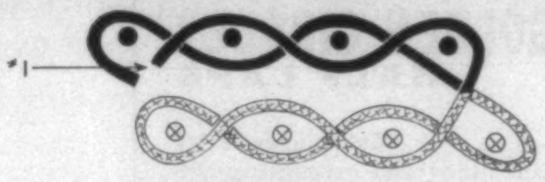

Fig. 20

It should be kept in mind that while it is possible to weave samples this way, it is not economically sound to weave production in this manner. If a fabric is to have 50 picks per inch in a 60" width, 100 picks would have to be thrown in a 30" width that opened out to the required 60". This principle of hinging, and opening out, is employed to make

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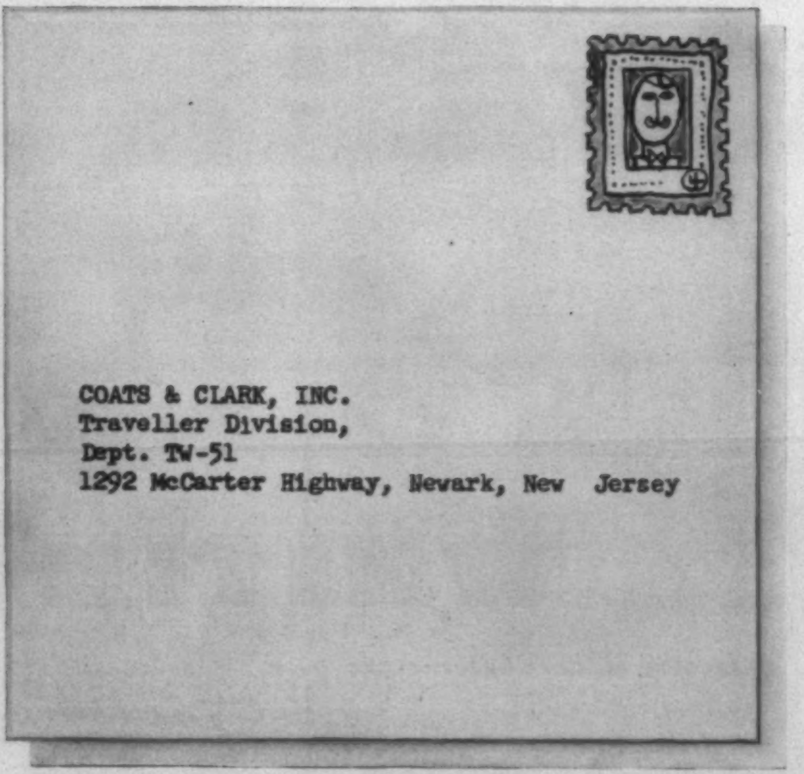

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samples or short lengths that could not otherwise be woven.

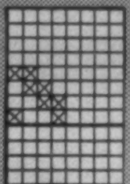
The side on which to hinge the fabric will be governed by the type of fabric being woven, and the kind of loom used. If a plain weave fabric is wanted, and is woven on a Draper loom (one shuttle) the hinge would best be put on the left. On the right side of the loom is the transfer, and with the hinge on the left, the tail of the incoming and outgoing bobbins will be at the selvage, where it always is. If the hinge is on the right, these tails will be in the center of the fabric, after it is opened out.

On the other hand, if a suiting fabric is made, with different color fillings, and is to be woven on a C&K box loom, the hinge may be best on the right. When a color is not used, it rests in its box on the left hand side, until called in again. This leaves a tail between uses of the same color. If the hinge is on the left, this tail will be in the center of the fabric, after it is opened out. With the hinge on the right, the transfer tails will still show in the center of the fabric, so there is no perfect way to weave cloth using this principle.

An interesting side light on this type of weaving is the ability to produce a fabric with an odd number of picks, on a 4x1 box loom. To get one pick when the fabric is opened out, two picks must be thrown at the loom. Thus it is possible to produce on a 4x1 box loom, a fabric that would require a 4x4 box loom if woven full width.

Weaving a twill that will open out to twice the woven width requires some special thought. First is the twill direction. If a fabric is to be sold as a right hand twill on the face, the layer that is woven face down, must have a left hand twill while weaving. Secondly, in the bottom layer of fabric, raisers become sinkers, and sinkers become raisers. That is, if an end is to be up, after the fabric is turned over, that end must be woven as a down. Thirdly, the twill line at the joint between the top and bottom layers, must be continuous. It may not have a crack or a break in the continuity of the twill line. This requires that the back weave be started in the correct manner in relation to the face weave. Fig. 21 is the 2-2 45° right hand twill that is wanted for the face weave. Fig 22 is the 2-2 45° left hand twill that is needed for the lower layer fabric.

Fig. 22



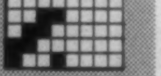


Fig. 21

The warp is arranged, 1 face-1 back while the filling is arranged 1 face-2 back-1 face, starting from the left. This will put the hinge on the right hand size. The weave is painted as seen in Fig. 23. The second pick in the weave is the first pick in the back fabric, and when the fabric is opened out these 2 picks will join together to form one single pick as if the fabric had been woven full width on the loom.

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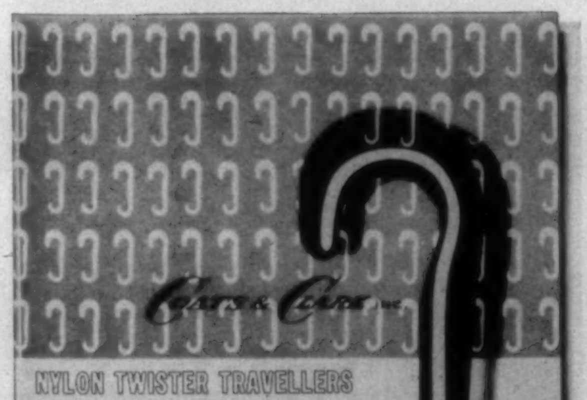

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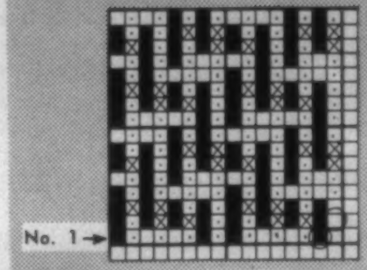


Fig. 23

It is the joint as pick one leaves the face fabric and as pick two starts the back fabric that will make the twill line continuous. In any 45° twill, reading ups and downs across the pick is the same as reading ups and downs along the end. Thus, this 2-2 twill must read 2 up-2 down across the pick. Starting on pick 1 and reading from left to right on face ends only, the weave is 1 up-2 down-2 up-2 down-1 up. This last "up" is circled in Fig. 23. Pick 2 will be placed in the lower layer, but will be the other half of a full pick when the fabric is opened out. Another "up" is needed to go with the one "up" at the end of the first pick. The last end on the right is in the lower layer fabric, and where this end crosses pick 2, it is painted a sinker as seen by the circle. This will be an "up" when the fabric is opened out, thus making the 2 "ups" which are necessary. The next 2 ends need to be down when the fabric is opened out, so they are painted "ups." This sequence of 2 up-2 down, is carried across the second pick. With this start of the back weave, it is then painted as a left hand twill. Face ends are raised over back picks to make two separate layers of cloth, which completes the weave.

If a weave has an odd number of picks, such as a 2-1 twill, it can still be woven, but the picks per repeat will be 12 and not 6. It will take 3 picks per repeat for both top and bottom layers or a total of 6. However, this does not work out with the cycling of the filling, and must be carried out 6 more, before the picks per repeat and the cycling come out together. Fig. 24 shows this weave. The first pick is started from the left in the face, then 2 back and 1 face. To be a repeat on 6 picks, pick 7 would be the same as pick 1. However, pick 1 is a face while pick 7 is a back. Thus, the weave must be carried to 12 picks before the two come out together.

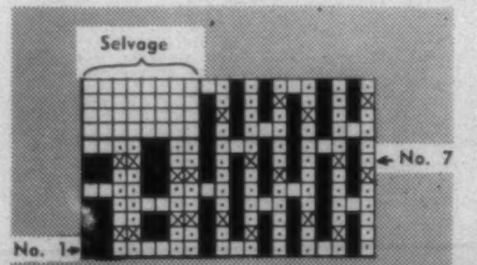


Fig. 24

(Continued on Page 76)

Cotton Utilization Conference Cites Chemical Modification As Cotton's Answer To Competition

S.R.R.L. COTTON UTILIZATION CONFERENCE OUTLINES FINISHING PROCESS FOR UPGRADING COTTON PRODUCTS

THE consensus at the Cotton Utilization Conference in New Orleans, La., May 1-3, was that cotton manufacturers must make full use of chemical modification processes if cotton is to keep its markets. Various finishing processes from the application of wash-and-wear resins to flame-resistant finishes were reported by staff members of the Southern Regional Research Laboratories. However, wash-and-wear topics easily dominated the discussions. The conference was sponsored by the Southern Utilization and Research Division of the Department of Agriculture, and was divided into two parts—mechanical processing (T. B., June '61) and chemical modification.

Advances In Wash-Wear Research

J. David Reid, S.R.R.L., pointed out to the audience that there are many problems remaining in the wash-wear field. Chief among these, he said, is the need to improve durability of the finish, particularly to home bleaching and laundering. Others include seam pucker, pebbling, shrinkage and odor.

Several methods have been utilized in research for wash-wear compounds with one of the most important being the aziridinyl groups. "APO" (tris-aziridinyl phosphine oxide) with a 7% add-on gives good wash-wear ratings, Reid said. Durability to all types of laundering has been excellent, including strongly acid souring conditions. There is one drawback, Reid pointed out. The APO finish is not good for white goods because a slight yellowing occurs when the fabric is bleached with a hypochlorite. The yellow can be removed by bleaching with an oxidative or reductive bleach, but will return when subjected to further chlorine bleaching. Other aziridinyl compounds have been investigated and it was found that they too give a yellowing with a chlorine bleach, Reid pointed out.

Work at S.R.R.L. on wash-wear finishes for cotton has also included the use of epoxy compounds. Experiments in this area were disappointing also, as far as wash-wear conditions were concerned, Reid said. However, some of the compounds gave good wet and dry crease resistance without an appreciable loss of strength.

Continuing investigations of the wash-wear group, the laboratories are experimenting with fabric structures; substituted formamides, which give relatively efficient crosslinking agents with formaldehyde; effects of substituents on the stability of the uron ring; various unsymmetrical acetal bis formals; and all phases of formaldehyde reaction with cellulose, reported the speaker.

Divinyl Sulfone Adducts For Wash-Wear

C. M. Welch, S.R.R.L., told the conference that a large family of new finishes for cotton has been developed based on the unusual chemical properties of divinyl sulfone. The compound can be used to attach active hydrogen compounds to cottons while at the same time imparting wrinkle resistance through crosslinkages.

Divinyl sulfone has a highly irritating odor, Welch pointed out, but when used as an addition product with active hydrogen compounds is odorless. Such adducts as this have been found to be soluble and can be applied with conventional equipment.

To speed up the reaction to cellulose, the divinyl sulfone adducts have been subjected to curing in the presence of an alkali catalyst. Sufficient redissociation of the adducts occurs during curing to generate the divinyl sulfone needed to give crosslinking and crease recovery, said Welch.

Preparation of the adducts is relatively simple and quick, the speaker pointed out. Amine adducts can be formed at room temperature by mixing the reagents in an aqueous solution. Divinyl sulfone adducts with alcohol may be formulated at 25-100° C. in the presence of catalytic amounts of such bases as sodium hydroxide, sodium alkoxides, tetramethylguanidine or benzyltrimethylammonium hydroxide.

To form both cyclic and linear adducts, the divinyl sulfone will react with water at 40-95° C. in the presence of alkaline catalysts. However, only the linear adducts appear to be reactive toward cellulose, reports Welch.

Pre or after-mercerization of fabrics treated with divinyl sulfone adducts frequently enhances wet crease recovery. After-mercerization also increases the tensile strength at the same time.

Crease Resistance By Dust?

A dust, made by exposing paraformaldehyde powder in a closed container to concentrated hydrochloric acid vapors, has been utilized to impart good wet and dry crease recovery to cotton fabrics, reported John D. Guthrie, S.R.R.L.

The fabric can be held between glass plates after dusting with the compound, but said the speaker, a more convenient and effective method is to expose the fabric in the same container as the dust, but without contacting it.

In dusting experiments between glass plates, it was observed that little improvement was obtained if oven dried fabric was used. Air equilibrated fabrics gave wet and dry crease recovery angles of 280-300° warp and filling at a .5% formaldehyde and 270-290° at .35% formaldehyde when treated for one to two days. Breaking strength losses were 40-50%.

A test made in a polyethylene barrel showed crease recovery angles of 280-300° with a formaldehyde content of .48%. This, too, reduced the breaking strength by some 50%. When the formaldehyde content was reduced to .2%, the crease recovery angles were reduced with a loss of approximately 40% in strength.

When formaldehyde content was lowered to .11%, recovery angles were 250-270°. This is only about one-seventh of the formaldehyde content required for comparable crease recovery angles in the Form D process. Good dye resist, with uniformity, is also attained at this level.

Twenty white, shrinkproofed, broadcloth shirts were subjected to individual "dunkings in the barrel and were worn and laundered by several different people. Up to the present time, said Guthrie, only one has failed. The general impression of most of the wearers was that the shirts are good at first with respect to wash-wear properties, but that they would require some ironing after about ten launderings.

Thermoplastic Cottons

Cottons that have been chemically modified by esterification or etherification are called thermoplastic cottons, reported Carl M. Conrad, S.R.R.L. He said that the first time his division became familiar with thermoplastic cottons was some years ago when a cotton fabric was cyanoethylated to 10-11% nitrogen. It was observed that this treated cotton was heat sensitive and softened materially when heated. However, this wasn't pursued any further.

More recently, continued Conrad, it has been found that highly acetylated (FA) cotton softens somewhat on heating and can be permanently pleated or creased with ironing.

Cellulose behaves as a highly crosslinked polymer. These crosslinks are hydrogen bonds that tie the neighboring chains into a crystalline domain. By chemical reaction as by cyanoethylation or acetylation, to high degrees, the hydrogen bonds are disrupted. If the reaction is carried far enough, the cotton cellulose will behave as a noncrystalline material, becoming less brittle, more extensible and strongly heat sensitive, Conrad pointed out.

When thermal tests on highly modified materials were run at the laboratories, the results showed that the reactions started out in a thermoplastic manner, meaning that they started to soften with heat. When the temperature reached a certain level, though, the cottons could be permanently creased or pleated and further rises in temperature did not dislodge them, giving a reaction similar to thermosetting resins.

The explanation for this peculiar behavior is that as these materials are heated, a temperature is eventually reached when the noncrystalline cellulose derivative begins to crystallize. This stage is not the previous crystal type but a new characteristic of the particular cellulose derivative present.

As cyanoethylated cellulose is heated, it begins to crystallize a little in the neighborhood of 100° C., reaches its maximum about 170° and melts or decomposes at approximately 180° C. FA cotton begins to crystallize at around 170° C. and continues as the temperature is increased to about 250°. The material will finally melt or decompose at above 320° C. The amount of crystallization that occurs is dependent upon the amount of chemical modification that the cotton has had.

Conrad summarized by saying that if the temperature of the acetylated cottons is carried above the melting point, it is not possible thus far to obtain recrystallization on cooling except in the most limited way.

Flame Retardant Finishes

Most of the work in this field has been based on a reactive resin forming monomer APO (tris(1-aziridinyl)phosphine oxide), George L. Drake Jr., S.R.R.L., reported to the conference. He said that APO has three active aziridinyl groups per molecule which can react with cellulose, condense with itself to form a polymer and react with other active substituents to form copolymers.

The most common combination and the one that is recommended for flame retardancy for cottons is the one combining APO with tetrakis(hydroxymethyl) phosphonium chloride (THPC). However, APO can be used in combination with various amines, compounds containing active methylene groups, phenols, carboxylic acids and various alcohols.

Combustibility of cotton can be reduced by impregnating the fabric with an aqueous solution or uniform suspension or dispersion of any of these combinations. The fabric must then be passed through squeeze rolls to remove any excess liquor. It is then dried at 100° C. and cured at 150°.

Drake continued by saying that the finish applied to cottons is resistant to alkaline and acid laundering and also to drycleaning. The degree of flame resistance obtained on the cloth is dependent upon the weight add-on of the chemicals.

If desirable, APO can be used by itself to impart flame retardancy to cottons by the use of an acid catalyst—$ZN(BF_4)_2$. The process was described as a relatively simple one that can be done on standard textile resin finishing equipment. It includes impregnating the fabric with an aqueous solution of the resin forming monomer and catalyst by immersion and removing the excess solution by passing the wetted fabric through squeeze rolls, followed by drying and curing.

Heat, with the help of the catalyst, initiates the reaction with cellulose and also cures the water-soluble, resin-forming monomer. This produces an insoluble, highly crosslinked polymer inside the cotton fiber. The process gives the fabric dimensional stability, wrinkle, rot, mildew and glow resistance in addition to flame retardancy.

Drake pointed out that a cotton fabric of eight to nine ounces per yard weight requires 11-14% add-on to pass the standard vertical flame test. He also stated that APO has been found to be reactive with the chlorotriazine dyes, and when applied to cotton gives brilliant colors that are fast to laundering.

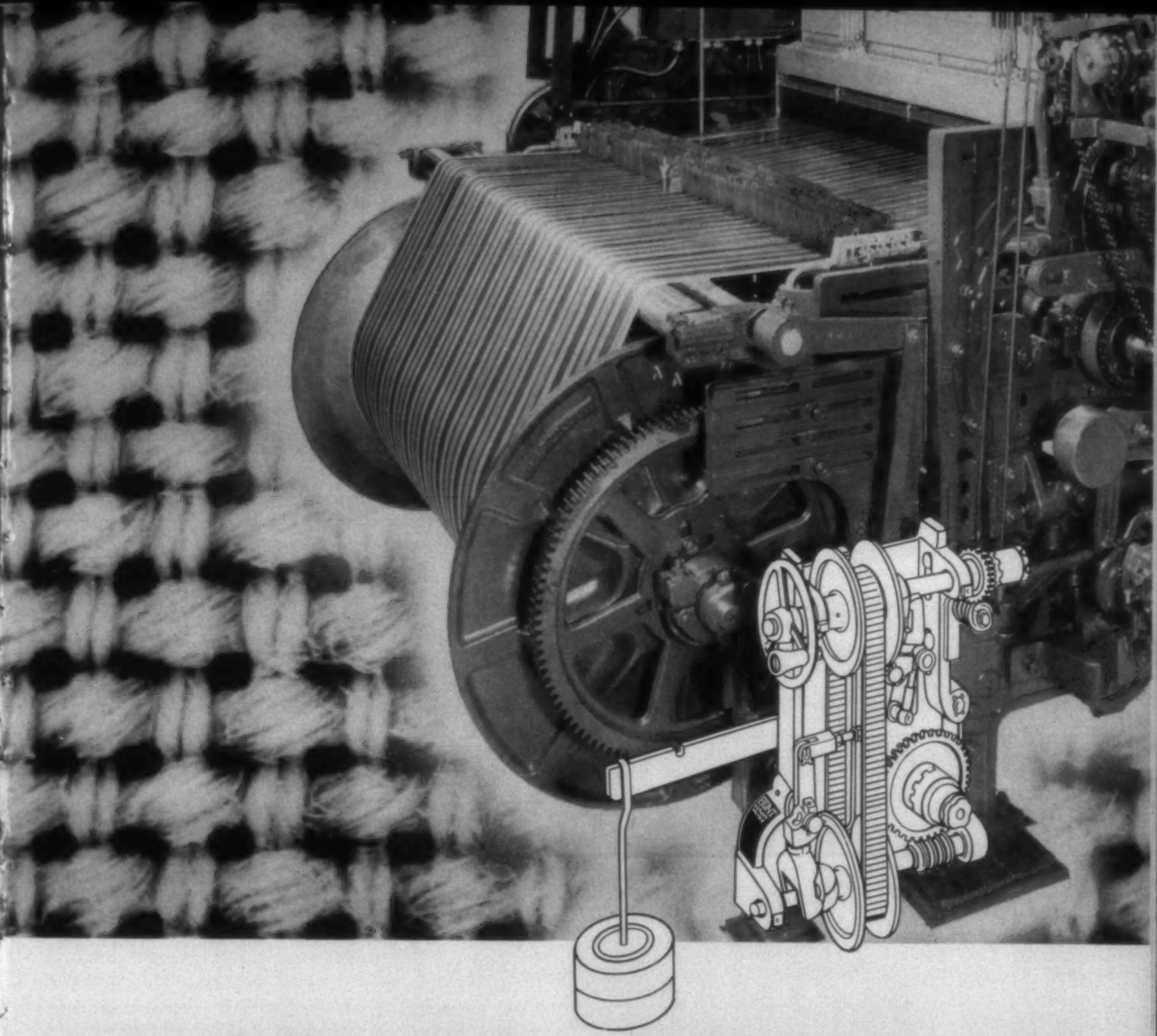
Costs Of Cotton Finishes

K. M. Decossas, S.R.R.L., presented to the conference the estimated costs and in-service evaluations of treating cottons with various finishes to impart rot, mildew, soil, weather, wrinkle resistance, water repellency, increased breaking strength and elongation, dyeability, solubility, reactivity, flame retardancy and many other improved properties.

Using a hypothetical case, he described a mill that desized, scoured and bleached 80x80 print cloth, 50 inches wide, 3.12 yards per pound, and then padded it through an aqueous solution containing 10.3% methylolmelamine and 11.9% formic acid. The goods are processed at a rate of 120 yards per minute; squeezed to a wet pickup of 80%; dried in a forced-air roller type drying oven for four minutes at 140° C.; washed in hot and cold water in a continuous counterflow open-width washing range; and dried on a tenter frame.

Thus processed, the product will contain some 7% add-on and possess good wrinkle and muss resistance, maintain good crease angles at least through 20 home launderings; yellow only slightly when exposed to hypochlorite bleach in comparison with considerable yellowing of conventional methylolmelamine finished cotton; and have no more than the usual 30% breaking strength loss effected by most resin finishes.

Decossas pointed out that the processing costs to obtain this fabric was only 3.7 cents per square yard extra when the mill was running 250 days a year and eight hours a day. However, he continued, if the mill ran 350 days and 24 hours per day,



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the costs would be lowered to some 2.7 cents. These costs don't include the cost of the fabric or a profit.

If the same plant decided to convert and use APO-THPC, Decossas continued, what would the costs be then?

Eight-ounce cotton twill, 60 inches wide, .81 pounds per yard conditioned weight would be run at a processing rate of 120 yards per minute and be padded with an aqueous solution of APO, THPC, triethanolamine and wetting agent. Then it would be dried in a forced-air, roller-type drying oven for four minutes at a temperature of 185° F.

Following this the fabric would be cured in the same oven for four minutes more at 285° F.; washed and softened in a continuous counterflow open-width washing range; and dried by any conventional drying method with an add-on of some 10%. Reaction efficiency for this treatment would be between 60 and 65% based on APO and THPC added to the system.

Using projected prices for THPC of 70 cents per pound and $2.25 per pound for APO, estimated total processing costs would range from 15.3 cents per square yard for the lesser time to 14.3 cents for the latter. Using long-range projected prices for these products of 30 cents per pound, the processing costs could be as low as 4.2 cents, Decossas pointed out.

Preliminary investigations have indicated that APO-THPC resin finishes could be applied to cotton fabrics over a wide range of weights and constructions from lawns and batistes to heavy industrial belting with good results. The per cent add-on needed to obtain flame retardancy is inversely proportional to fabric weight with the exception of a few fabrics where construction is the predominant factor, or where cotton has been combined with hydrophobic materials not reacted with the resin.

Water Repellency

Costs for water repellency in the hypothetical plant would be much less than for the APO-THPC treatment, Decossas noted. Here the plant would polymerize tetravinyl silane and methyl hydrogen siloxane simultaneously for 90 minutes at 176° F. in a polymer tank using benzoyl peroxide as a catalyst and methyl isobutyl ketone as a solvent. The polymer would be transferred to a mixing tank where it would be made into an emulsion by use of ethyoxlated oleamide as the emulsifier. The basic zirconyl acetate to be padded onto the fabric is made by adding zirconyl acetate, an organo-zirconium salt, which hydrolizes when heated.

A 5.5 ounce per square yard, 42-inch poplin, processed at a rate of 120 yards per minute would be utilized to maintain a 90% wet pickup from the padder. The fabric would be dried for 20 seconds at 290° F. and cured for three minutes at 325° F. If creaseproofing is desired, then the fabric must be washed with water at 140° for one minute after curing and dried on cans at 240° F.

This method of processing gives a product add-on of 2.5% by weight if creaseproofing is not used. If creaseproofing is used, the add-on will be 6.5% by weight.

Decossas gave the estimated processing costs at 3.8 cents per square yard when operating 250 days, eight hours per day; and 3.3 cents for 350 days at 24 hours. Prices range a little higher for silicone alloy-triazine treatment. They are 5.7 and 4.9 cents, respectively.

All costs were figured on new machinery. If machinery in a finishing plant is fully depreciated, processing costs would be less by as much as .5 cents per square yard at the low production level and .1 cents at the high production level, depending upon the finish used.

Slight Decline Noted In 1960 Looms In Place By Bureau Of The Census

There were 432,904 looms in place at broad woven fabric mills at the end of 1960, according to the Bureau of the Census. This was 1% less than the 435,510 looms in place at the end of 1959.

There were 416,468 cotton and man-made fiber looms and 16,436 woolen and worsted looms in place at the end of 1960. At the end of 1959 the numbers in place were 418,259 and 17,251, respectively.

Of the total number of looms in place on December 31, 1960, there were 321,007 in cotton mills, 96,802 in man-made fiber and silk mills, and 12,933 in woolen and worsted mills. This represented declines of 1% for cotton mills and 4% for woolen and worsted mills, while the number of looms in man-made fiber and silk mills increased 2%.

April Sales Yarn Production Up From March, Down From April 1960

Sales yarn production in April averaged 15.1 million pounds per week compared to the weekly average production of 14.3 million pounds in March and 15.5 million pounds in April of last year. Weekly average knitting yarn output in April amounted to 8.4 million pounds while other sales yarn production averaged 6.7 million pounds.

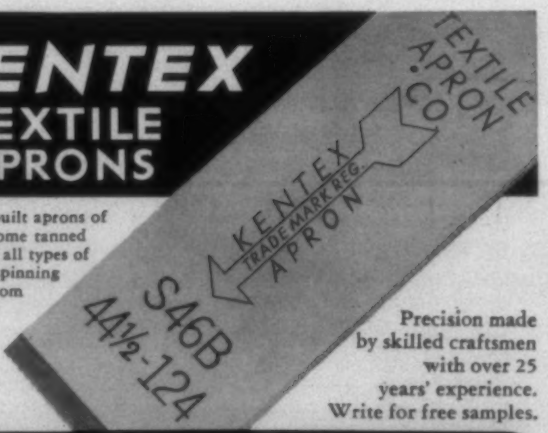
Wool sales yarn output in April averaged 2.3 million pounds. This was 13% greater than the output in March. Spun synthetic sales yarn produced on the woolen and worsted systems in April averaged 11% above the March level.

Carded cotton sales yarn production in April averaged 6.7 million pounds per week or 3% above the March level. Production of combed cotton sales yarn also increased 3% during this period.

Imports Of Cotton Fabrics Show Sharp Decline In April From April 1960

April imports of cotton fabrics into the U. S. dropped sharply from the corresponding month last year, continuing the decline registered during the first quarter, according to the U. S. Census Bureau.

Countable cotton cloth imports totalled 16.5 million yards as compared with 45.8 million in April of 1960. April im-



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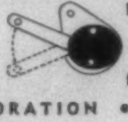

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ports brought the total for the first four months of 1961 to 84.3 million yards, down from the 165.7 million yards imported in the same period of 1960.

A drop in greige sheeting imports in April accounted for the major share of the decline in all broad woven cotton greige cloths from 36.7 million yards last year to 8.9 million in 1961. Imports of sheetings dropped from 21.2 million yards in April of 1960 to 3.3 million yards in April of this year, principally because shipments from India and Egypt virtually ceased.

Dollar value of broad woven greige goods declined to $1.6 million in April from $4.8 million in April 1960.

U. S. imports of broadwoven finished goods totalled 8 million yards valued at $2.8 million in April as compared with 9.8 million yards valued at $3.4 million in April of last year.

Woolen And Worsted Fiber Consumption Shows 12% Gain In April From March

The weekly average rate of fiber consumption on the woolen and worsted systems in April was 12% above the March rate but 11% below the comparable month of 1960, according to the Bureau of the Census. These figures exclude the production of man-made fiber top from tow without combing.

The weekly average raw wool consumption in April was 7,716 thousand pounds (scoured basis) or 12% above the March level and 8% below the April 1960 rate.

Consumption of apparel class wool was 14% above the March rate and 3% above April 1960.

The rate of consumption of carpet class wool increased 7% from the preceding month but was 25% below the comparable period of last year.

Consumption of fibers other than raw wool averaged 5,338 thousand pounds per week. This was 12% above the rate of consumption for the previous month but 14% below the April 1960 rate.

Fibers Consumed In Woolen Spinning And Worsted Combing—April 1961
(Thousands of pounds-scoured basis for greasy wools)

Classification	April 1961 Weekly Average	March 1961 Weekly Average	April 1960 Weekly Average
All Fibers, Total	13,054	11,673	14,591
Raw Wool	7,716	6,910	8,416
Apparel Class	5,167	4,519	5,004
Woolen System	2,329	2,050	2,463
Worsted System	2,838	2,469	2,541
Carpet Class	2,549	2,391	3,412
Noils, reprocessed and reused wool, and other animal fibers	2,984	2,574	3,563
Man-Made Fibers	2,003	1,887	2,194
All Other Fibers	351	302	418

Cotton Yarn Imports Slack Off In '61 After Setting Records In '60

After setting a record-making pace in 1960, cotton yarn imports are off in 1961, according to the Department of Commerce. Total imports for the first four months were 3.6 million pounds, some 1.9 million pounds under the total for the first four months of 1960. With the drop-off in quantity there was a corresponding drop in the value of yarn imports. Imports in the first four months were valued at $1.8 million, a drop of $789,000 from the value of shipments in the same period of 1960.

April cotton yarn imports totalled 742,139 pounds valued at $394,000 as compared with 1.7 million pounds valued at $799,000 in April of last year.

In the category of non-bleached, non-colored, non-plied, non-combed yarns Portugal led the field as a source of U. S.

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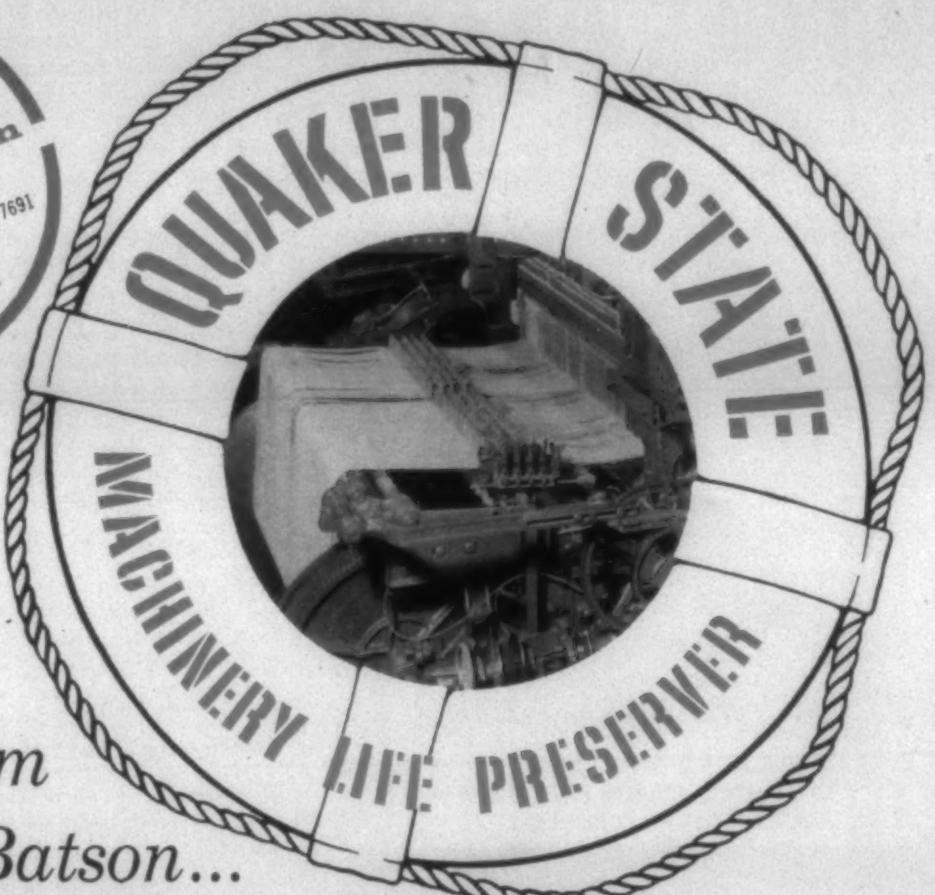

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Now you can order from ONE source, ONE lubricant for all plant greasing needs, plus reduce the number of lubrications and improve machinery efficiency. A product of the world's largest and most respected marketer of highest quality Pennsylvania oils, Quaker State's Superfine Multi-Purpose Lubricant, with fast delivery available from Louis P. Batson Company, offers you these money-saving advantages for your textile plant:

1. It can be used to meet *all* your lubricating requirements. No other lubricants need to be stocked.
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3. It will not melt or drip at temperatures of over 500° F.
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Quaker State's Superfine Multi-Purpose Lubricant has exceptional properties of lubricity, adhesiveness to metal surfaces, heat stability and moisture resistance—Batson and Quaker State add up to SAVINGS for you in maintaining your production schedules.

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yarn imports with a total of 422,056 pounds valued at $193,582 originating in that country. Total imports of that category were 581,028 pounds valued at $256,226 as compared with 1.2 million pounds in April of 1960.

Imports of bleached or dyed, single or plied, carded or combed yarn in April totalled about 160,000 pounds valued at $129,000. Comparison figures for April of 1960 were not available.

Raw Wool Stocks As Of January Were Down 12% From Start Of '61

Total stocks of raw wool on January 1, 1961, amounted to 132.0 million pounds (scoured basis), according to the Bureau of the Census. This represented a decrease of 19.4 million pounds from the 151.4 million pounds reported for January 1, 1960.

Stocks of apparel wool decreased 12% to 91.3 million pounds from the 100.7 million pounds reported for January 1, 1960. Domestic apparel wool stocks on January 1, 1961 amounted to 61.4 million pounds while there were 29.9 million pounds of foreign apparel wool. The comparable figures for January 1, 1960 were 61.9 and 38.8 million pounds.

During the year manufacturers' and topmakers' inventories of apparel wool decreased from 73.3 million pounds to 60.4 million pounds. Dealers' stocks increased to 30.9 million pounds from the previously reported 27.4 million pounds.

Designing Multiple Fabrics

(Continued from Page 68)

If a tape selvage is wanted on this fabric, it will appear on the left in Fig. 24. With this filling arrangement of 1 face/2 back/1 face, the hinge is on the right, therefore, the selvage for both top and bottom layers will be on the left. The face and back ends cannot be grouped together, but must be arranged 2 face/2 back. As in any tape selvage, the shuttle will go into the box from one shed, then, on the return trip, it must enter a different shed, so that it will bind off the filling. This selvage repeats on 8 picks (4 for each layer). The body weave repeats on 12 picks, so it will take 24 picks before these two come out together.

Automate Or Liquidate

(Continued from Page 38)

more beholden to the federal government. The steady encroachment of our government on the prerogatives of private industry and the free enterprise system seems to have no end.

Let me suggest, however, that anger alone will not solve our problem for anger often moves men to action they might not otherwise attempt. I do not propose that we surrender the right to be angry, but I do suggest that we will come out better if we channel the energy generated by our emotions into a determination to move over and beyond those who would exert further controls upon us. We must be so right and so sound that what is left of the free enterprise system will prevail and thereby, in time, restore the superiority of private operation.

Unless we are able to prevail with soundness, South Carolina—the only area for which I can speak—instead of being the center of the most ultra-modern textile industry in the world, might become the most desperately depressed area in the U. S.

Though some of the statements I have made may sound pessimistic, I am actually optimistic in the firm belief that our industry can be great enough to achieve heights of accomplishment demanded by present and future circumstances.

It would be easy to say in the light of what happened to the textile industry in New England that it could happen here, that the textile industry could diminish. We know, as a matter of fact, that the pressures on South Carolina industry today are even more severe than those which disrupted the industry in New England.

I prefer to believe—and do believe strongly—that it will not so happen in South Carolina, because we shall accept the challenges, the responsibilities and certainly the opportunities which will come to our ultra-modern industry of the nearby tomorrow.

S.T.A. Discussion

(Continued from Page 47)

Mill C: We're getting away from it now, but we have had trouble with the combination wind before on our spoolers.

Mill D: Does anyone in the group rewind their "Mae West" filling bobbins? What I mean by "Mae West" is sluffed filling that has been covered, making a bad bobbin.

Mill K: When they get to the spinning room, our battery hands are instructed not to use them. We rewind them on cones and then back to the bobbin.

How can you keep lap-ups off steel rolls?

Mill G: Has anyone found a way to keep lap-ups off the steel rolls outside of the orifice of the Pneumafil?

Mill C: Our spinners do that.

Moderator: About the only way to do it that I know of is to maintain a rigid cleaning schedule.

Mill C: Is there a regular schedule for that or is it done when the spinner has time?

Mill I: Our strategy is to clean them when we have an end-down.

Moderator: Does anyone have a definite schedule for cleaning steel rolls?

Mill C: We have schedules for cleaning the tubes of the vacuum system for our frames, but not the steel rolls.

Mill B: We did that for about six months, but gave it up. We'd figured it was cleaning the thing that was supposed to do the cleaning.

How do you run honeydew cotton?

Mill J: How do you run honeydew cotton?

Moderator: I've talked with several cotton men and their concensus of opinion is to keep it as dry as possible throughout the entire operation—abnormally dry. You will run into static electricity sometimes. But their answer is still to dry it out and do the best you can with it.

Mill D: I've found that honeydew cotton gives the most trouble when rolls are heavily weighted. On older type spinning frame drafting elements, honeydew is not so much a problem because the frames are not as heavily weighted as the newer ones.

Moderator: Do some types of cotton have more honeydew than others?

Mill A: I've talked with several cotton men about this problem and they say that it comes from a bad condition in the growing of cotton and that this last crop was worse than usual.

Moderator: We run into it quite often with California irrigated cotton.

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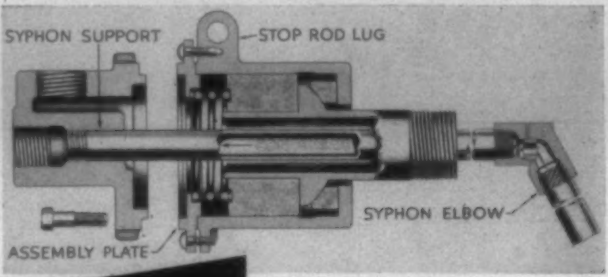

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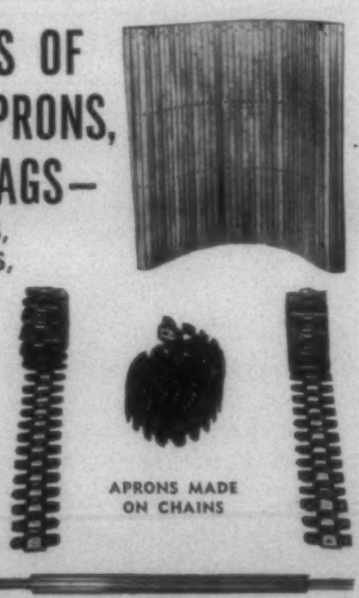

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PERSONAL NEWS

Cowan

John C. Cowan Jr., board vice-chairman of Burlington Industries, Greensboro, N. C., has been awarded an honorary degree of Doctor of Humanities by North Carolina State College. Cowan was cited for his endeavors to the total civic, educational and social development of North Carolina. He is immediate past president of the N. C. Textile Manufacturers Association, a member of the N. C. Textile Foundation and a member of the N. C. Vocational Textile School board of trustees.

F. M. Arthur of Textiles Incorporated, Gastonia, N. C., has been named chairman of the cotton buyers and classers division of the North Carolina Textile Manufacturers Association. Arthur succeeds Tom B. Crenshaw of Spindale (N. C.) Mills. Other officers named are Wilson E. Webb of P. H. Hanes Knitting Co., Winston-Salem, N. C., vice-chairman; J. O. Owens of Climax Spinning Co., Belmont, N. C., and F. H. Ross of Cannon Mills Co., Kannapolis, N. C., members of the executive committee.

Wade F. Denning, former vice-president and general manager of Wiscassett Mills, Albemarle, N. C., has been named a director of Tuscarora Cotton Mill, Mt. Pleasant, N. C. Denning is also a director of China Grove (N. C.) Mills and Oakboro (N. C.) Cotton Mills Co.

A. Wilkerson Gunn has been named executive vice-president and chief executive officer of Abney Mills, Greenwood, S. C. Gunn has been with Abney since October 1960 when he was named vice-president in charge of finance. Prior to joining Abney he was with Callaway Mills, LaGrange, Ga., as vice-president. He is a graduate of Georgia Tech with a degree in textile engineering.

Stanley Brooks has been named executive vice-president of H. W. Butterworth & Sons Co., Bethayres, Pa., textile machinery manufacturers. Brooks became vice-president in charge of sales in 1959 after seven years as chief engineer. Formerly, he was New England sales manager. After attending the Rhode Island School of Design, Brooks was employed in the engineering department of Textile Finishing Machinery Co., and became chief engineer. He spent two years as production manager for the National Co., Malden, Mass., and returned to Textile Finishing Machinery Co. as chief engineer at the time of its purchase by Butterworth in 1945.

THESE 13 MILL MEN attended the North Carolina State College short course in statistical quality control for the textile industry, May 15-26. Front row *(left to right):* Prof. William C. Stuckey Jr., N. C. State instructor; Thomas D. Woods, Riegel Textile Corp., Trion, Ga.; Jack H. McGuinn, National Spinning Co., Whiteville, N. C.; Wendell P. Hoyle, Mohasco Industries, Greenville, Miss.; Richard G. Riedesel, Minnesota Mining & Mfg. Co., St. Paul, Minn. Second row *(left to right):* William L. Mathias, Allied Chemical Co., Columbia, S. C.; Thomas A. Owen, Burlington (N. C.) Hosiery Co.; James S. Truitt, Franklinton Fabrics, Burlington Industries, Franklinton, N. C.; Thomas C. Edgerton, Celanese Fibers Co., Charlotte, N. C.; Richard E. Davis, Lockhart (S. C.) Mills. Back row *(left to right):* Dame S. Hamby, N. C. State instructor; Cornelius B. Young, Abbeville (S. C.) Mills; James D. Plyler, Calhoun (S. C) Mills; Benjamin F. Beasley Jr., Dixie Mercerizing Co., Chattanooga, Tenn.; and Willie R. McCorquodale, Cone Mills Corp., Greensboro.

L. R. Brumby, vice-president in charge of manufacturing at Bibb Mfg. Co., Macon, Ga., has been named vice-president in charge of research and development. Under his direction the company will launch an expanded program of research in search of new ideas, methods and products. . . . John S. Turner, vice-president in charge of the Columbus, Ga., properties, has been named vice-president in charge of manufacturing, succeeding Brumby. Turner joined the company in 1920 and worked through various departments, becoming superintendent of Osprey Mill at Porterdale, Ga., and later general superintendent of all Porterdale mills. He has been in charge of Columbus properties since 1941. He was named vice-president in 1953. . . . McAllister Isaacs has been named general superintendent of the Columbus Mills. Isaacs joined the company in 1933. . . . C. J. Brogdan, who has been with Bibb since 1935, succeeds Isaacs as superintendent of Anderson Mills.

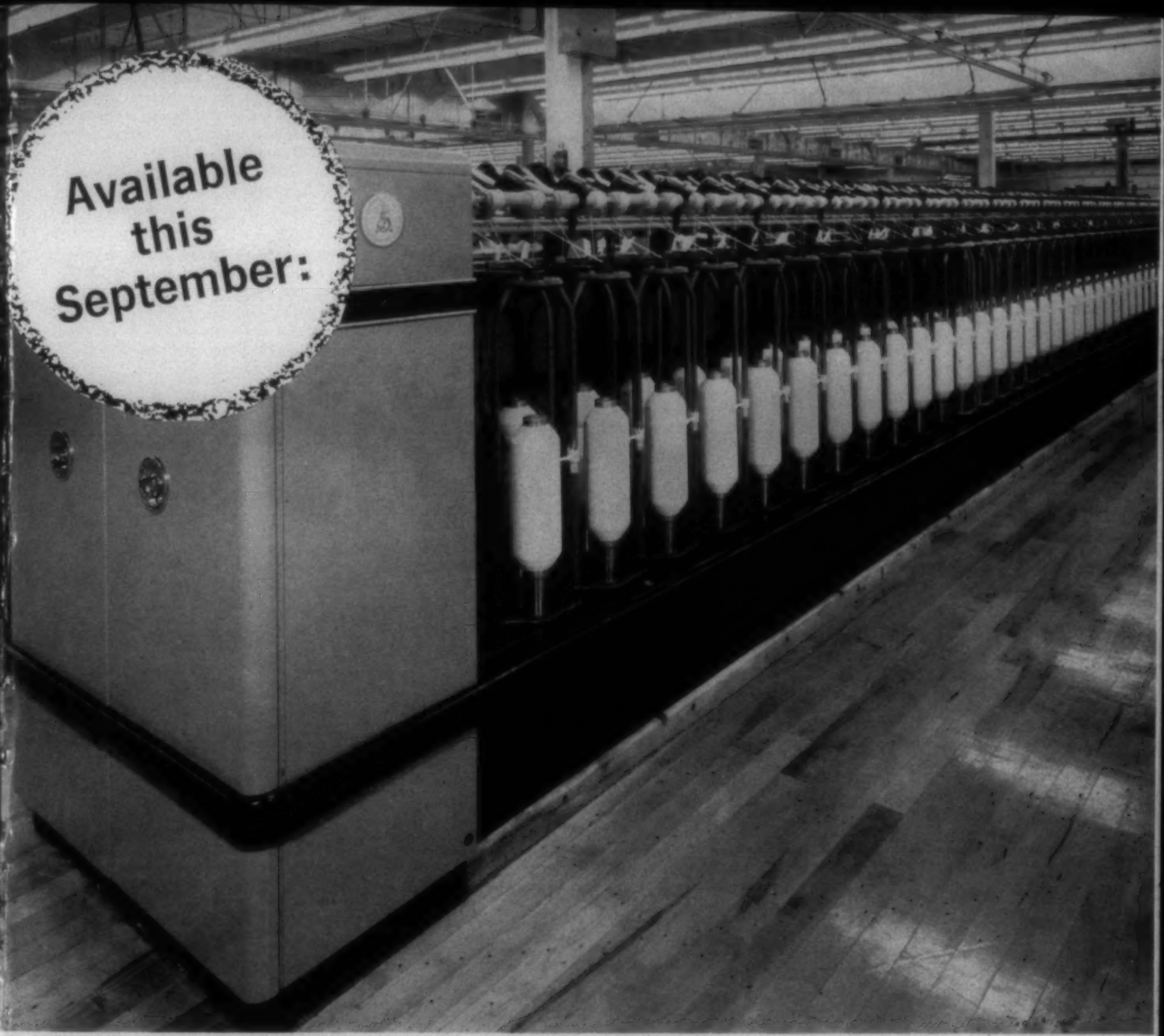
Brumby

Turner

Isaacs

Brogdon

John E. O'Sullivan has been named executive vice-president of Indian Head Mills, New York City. In this new post he will have charge of all operating and corporate



This Saco-Lowell Rovematic Frame is now in operation in one of the nation's most modern textile plants.

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Orders are being taken now by Saco-Lowell Shops for fall delivery of Rovematic Roving Frames. An entirely new concept that breaks with the past, Rovematic delivers a 14" x 7" package of superior roving with a flyer speed of 1,200 R.P.M. maximum and a front roll (1⅛") speed of 350 R.P.M. maximum.

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staff activities and will report directly to the president. O'Sullivan is one of the original officers of Indian Head Mills, having served initially as treasurer and secretary, and since 1955 as vice-president and treasurer. . . . James J. Gavin Jr. has been named vice-president and treasurer to succeed O'Sullivan. Gavin has been assistant treasurer and controller. He has been with Indian Head since its formation in 1953. Initially chief accountant, he was named assistant treasurer in the first year of operation. In 1956 he became controller.

Brigadier General Oliver C. Harvey has been named director of the Military Clothing & Textile Supply Agency of the Philadelphia Quartermaster Depot. General Harvey succeeds Major General Webster Anderson, who has been named Quartetrmaster General.

Coker

Coggeshall

White

Three new vice-presidents have been named by Sonoco Products Co., Hartsville, S. C. They are C. W. Coker Jr., P. C. Coggeshall and R. B. White. Coker joined the company in 1958 in the standards department. He is a graduate of Princeton University and received his M.A. from Harvard School of Business. Coker was also named to the board of directors. Coggeshall has been with Sonoco since 1939. He joined the company as assistant to the vice-president and shortly after was named assistant purchasing agent. In 1946 he was named general purchasing agent and assumed the duties of director of purchasing in 1953. R. B. White joined Sonoco in 1928. He was the first supervisor of the standards department. In 1946 he was named superintendent of the paper mill and in 1955 was named production manager. He is a graduate of Clemson College.

Sayers

Lester S. Sayers, formerly with Opp & Micolas Cotton Mills, Opp, Ala., has joined the Bama Cotton Mills in Enterprise, Ala., and the Geneva Cotton Mills in Geneva in the capacity of assistant manager. Both mills are owned by the same corporation. Sayers will make his headquarters in Enterprise.

Robert M. Crooks has been appointed to the newly-established position of director, industrial and community relations, for The Chemstrand Corp. Crooks will make his headquarters at the corporation's New York offices. He has served as personnel director for the Univac Division of Remington-Rand Corp. Previously he was associated with International Business Machines Corp., New York, in corporate personnel administration. From 1949 until 1958, he was with United Parcel Service, New York.

Arthur West has been named vice-president of Charm Tred Mills, according to an announcement by Frank S. Greenberg, president. West, former manager of Keowee Mills in Easley, S. C., has general responsibilities for overall manufacturing and product development. He will make his headquarters at the Charm Tred plant in Monticello, Ark. He is a graduate of Clemson College and prior to his employment at Keowee Mills was with American Viscose Corp.

Dr. Warren Stubblebine has been promoted to sales manager, roll division, Stowe-Woodward Inc., Newton Upper Falls, Mass. Formerly director of research and development for the company, Dr. Stubblebine will now have responsibility for both domestic and international sales as well as all technical services.

V. J. Dionne has been appointed sales representative of the newly formed fiber division of Reeves Bros. Inc., New York City. The Reeves fiber division was established recently for the production and sale of staple, tow and multifilament polypropylene. Dionne was previously connected with Industrial Rayon Corp. Prior to that he was with the fiber division of the Virginia-Carolina Chemical Corp.

Arthur M. Richman, president of Art-Rich Mfg. Co., Dalton, Ga., was named president of the Tufted Textile Manufacturers Association at that group's recent meeting in Miami Beach, Fla. Richman was formerly vice-president of the association. . . . M. E. Keller of E. T. Badwick Mills was moved up to vice-president from his former post as treasurer.

Amory

John A. Amory has joined the marketing staff of Leesona Corp., Providence, R. I., as a senior market analyst. Prior to joining Leesona, Amory was in the equipment leasing business and before that, for a period from 1947 to 1959, he was a sales representative for Draper Corp., Hopedale, Mass.

Westmoreland

Carson

Steel Heddle Mfg. Co., Philadelphia, Pa., has announced the appointment of two new sales representatives in the South. Robert W. Westmoreland has been assigned to the Greensboro, N. C., office. He is a 1950 graduate of Clemson College, Clemson, S. C., where he received his B. S. in textile engineering. For the past ten years Westmoreland has been employed by Steel Heddle, serving in both production control and shuttle engineering and specification capacities. . . . J. D. Carson Jr., who will work from the Atlanta, Ga., office, was graduated from the textile manufacturing course of Clemson. He began employment as a member of a training program at the Haynsworth Plant of the Woodside Mills, and prior to joining Steel Heddle was weave room overseer.

L. Louis Malm has been named vice-president of Midland-Ross Corp., Cleveland, Ohio, and general manager of Industrial Rayon Co., New York City. The rayon company was merged into Midland-Ross last month. Prior to the merger, Malm was vice-president in charge of research and engineering for Industrial Rayon. In his new post, he will be in charge of all operations of Industrial Rayon. Malm joined Industrial Rayon's engineering staff in 1944. He was promoted to chief engineer in 1949, was elected vice-president of engineering in 1958 and became vice-president of research and engineering in 1960.

Charles E. Pratt has been named branch manager of the Charlotte, N. C., office of General Mills' chemical division, supervis-

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ing sales in the Southeastern states. He joined General Mills in 1956 as a commercial development specialist and has served as a sales representative for the past three years. He will be responsible for sales of General Mills Versamid polyamide resins, GenEpoxy epoxy resins, Genamid resins, fatty nitrogen compounds, Deriphat amphoteric surfactants, and other organic chemical specialty products.

Mayes

Wiley Mayes has been named assistant manager of Glen Raven (N. C.) Cotton Mills. Mayes joined Glen Raven in 1948 as a learner in the cloth grading department, advancing to shift supervisor less than a year later. Prior to his latest promotion, he had performed production planning and scheduling duties since 1954, and became production manager in December 1957.

Richard B. Anderson has been named a sales representative in six Southern states by the industrial division of Nopco Chemical Co., Newark, N. J. He will handle sales of all industrial division products, although specializing in textile chemicals, in South Carolina, Georgia, Alabama, Tennessee, Mississippi and Arkansas. Anderson holds a B. S. degree in textile management from Auburn University. He worked for Peerless Woolen Mills, Rossville, Ga., before joining Nopco in September 1960. He later spent some months at Nopco's textile laboratory in Cedartown, Ga., before going into the field. He is a member of the American Association of Textile Chemists & Colorists.

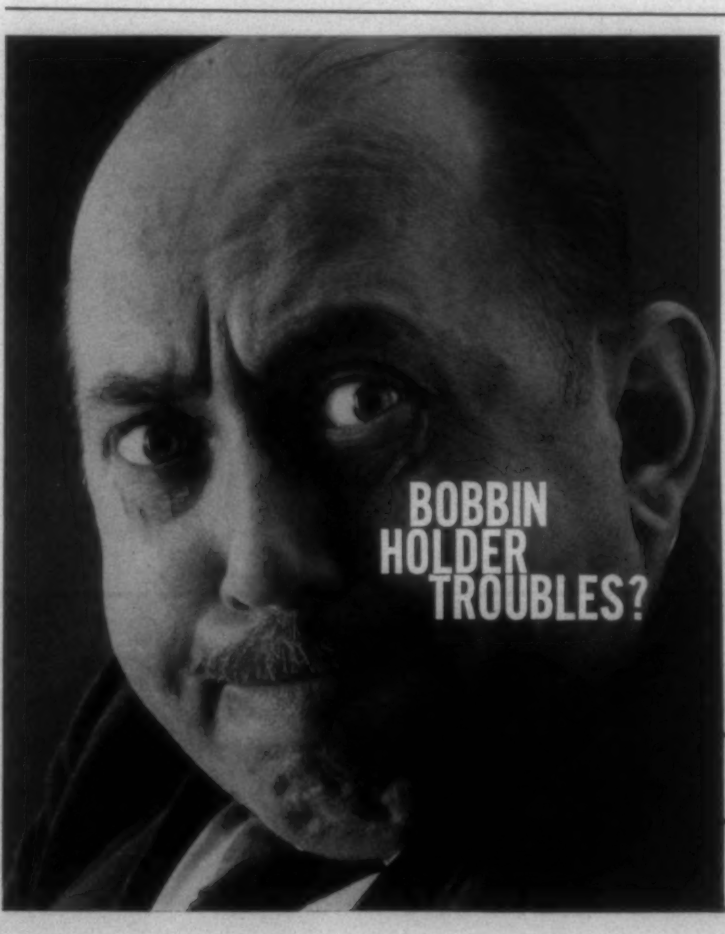
P. R. Monaghan has been named to the newly created post of general sales manager of Jefferson Chemical Co., Houston, Tex. Monaghan will be located at the company's headquarters in Houston. He will be charged with the direction of the firm's domestic and foreign sales force, long-range planning and continuous development of the sales organization. He has been Eastern regional manager since 1957. . . . R. E. Werley, assistant sales manager, has been assigned to the company's New York City office where he will have special responsibilities for direction of sales to the major chemical and chemical consuming companies with headquarters and plants on the Eastern seaboard. Werley has been with Jefferson since 1952.

John W. Brooks, executive vice-president of domestic operations for Celanese Corp. of America, Charlotte, N. C., has been elected a director of the company. He has held the vice-presidency for the past year. After joining Celanese in 1955 as fibers merchandising manager, he was later placed in charge of fibers marketing and in 1956 became vice-president and general manager of Celanese Fibers Co. Later Brooks was promoted to presidency of the Fibers Co. . . . James R. Kennedy, executive vice-president of finance and administration, was also named as a director of the firm. Prior to joining Celanese in 1944 as an accountant, Kennedy was associated with the Home Fire Insurance Co., New York City, and Peat Marwick Mitchell & Co., public accountants, New York City. Celanese moved Kennedy to assistant secretary in 1947 and he became vice-president in charge of industrial relations in 1957.

Fred W. Langdon has been named product development manager of the Johnston (S. C.) Division of Riegel Textile Corp. Previously Langdon headed his own company, Barkana Sales, and before that was with Deering Milliken & Co., for 12 years, where he served as sales manager of the baby products division, and later as sales head of the Agilon yarn division.

Powers

Dr. Donald H. Powers has been named assistant director of Fabric Research Laboratories, Inc., Dedham, Mass., and will head up the expanding chemical research functions of the firm. He was formerly with Warner-Lambert Pharmaceutical Co. where, for the past ten years, he was head of research and became vice-president of their Research Institute, and during recent years has acted as a consultant for Arthur D. Little Inc. Dr. Powers has been granted more than 50 patents for his work in the rubber chemicals and textile dyeing and finishing fields and has published dozens of technical papers in the field of textile chemicals and resin finishing and cosmetic research. He is active in many technical societies, including tthe New York Academy



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of Science and the Fiber Society. He has been a past president of the Society of Cosmetic Chemists; on the executive committee and former trustee and treasurer of the Textile Research Institute where he holds life membership; past chairman of the Rhode Island Section of the A.A.T.C.C.; and is a Fellow of the American Association for the Advancement of Science.

Raymond R. Currier has been named to the newly-created position of supervisor, textile industry sales, for the chemical division of Pittsburgh Plate Glass Co., Pittsburgh, Pa. In his new capacity Currier will be responsible for the development of sales of hydrogen peroxide and other chemicals to the textile industry. He joined Pittsburgh Plate's chemical division in 1958 as a technical representative for the market development department in Pittsburgh. Currier is a graduate of North Carolina State College and a member of the American Association of Textile Chemists & Colorists.

Orr

J. Lawrence Orr, formerly Whitin Machine Works sales manager for the Charlotte-Greensboro area, has been transferred to the company's main office at Whitinsville, Mass. Orr has been connected with the Whitin sales organization for 11 years. . . . Harry B. Patterson of Greensboro has been named regional sales manager of the Charlotte-Greensboro area. Patterson has been with Whitin's Greensboro sales office since 1956, most recently as assistant regional sales manager. . . . Lucius M. Hair, Charlotte, has been named assistant regional sales manager for the Charlotte-Greensboro area. He will make his headquarters in Charlotte. He has been with Whitin's sales organization since 1950. . . . William J. Dunleavy of the Whitinsville office has been named to the newly created post of manager of field services, in which post he will be responsible for the co-ordination of service and erecting of all cotton machinery. Dunleavy joined Whitin in 1921 and has served in a number of executive capacities.

Hair

Patterson

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Hugh K. Smith has joined A. B. Carter Inc., Gastonia, N. C., as a sales engineer and will serve the territory covered by the late Jack K. Davis. Smith will make his home at West Point, Ga.

Dr. Joel Lindberg, visiting research professor of textiles at North Carolina State College, Raleigh, has been awarded the 1961 Polhem Award as the author of the outstanding Swedish scientific paper of the year. Dr. Lindberg will receive a gold medal and a cash award of $3,000 from the King of Sweden at special ceremonies in Stockholm. His paper is entitled "Scientific Aspects of Wool Fabrics as Garment Construction Materials." Dr. Lindberg is on a one year leave of absence from his position as associate director of Swedish Textile Research Institute, Gothemberg.

James V. Corr has been named executive vice-president of Buck Creek Cotton Mills, Starkville, Miss. Corr was formerly a partner in the firm of Dent & Corr, certified public accountants.

Hans J. Klaeui has been appointed to the development engineering staff of James Hunter Inc., Mauldin, S. C. Klaeui was formerly with American Rieter Co. Inc., a subsidiary of Rieter Machine Works Ltd., textile machinery manufacturers located in Winterthur, Switzerland. At Rieter he was sales engineer in charge of all service, engineering and sales activities. In 1955, he came to the U. S. to join Deering Milliken's industrial engineering department as an industrial engineer. This was followed by two years with Monarch Mills, Union, S. C., as research engineer, after which he became associated with American Rieter Co. Inc.

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Guerrant

William B. Guerrant, Dow Chemical Co.'s sales manager for textiles in Charlotte, N. C., has been assigned to a new post overseas with Dow Chemical International Ltd., S. A. In his new post he will serve as project sales manager for Zefran fibers in Europe and will set up marketing operations for the firm there.

Luther McGinty and David Greene of Argus Color & Chemical Co., Charlotte, N. C., have been appointed sales representatives for the textile division of General Foam Corp., New York City. The foam division markets urethane foam for use in the textile industry in lamination to fabric.

Antel Varas and Alex Mumford have been elected vice-presidents of Wunda Weve Carpet Co., Greenville, S. C. Simultaneously with these promotions, J. C. Summerell, vice-president and sales manager, was elevated to the position of senior vice-president and sales manager, and W. W. Pate Jr., vice-president in charge of production, was named vice-president and general manager.

John R. Longenecker has been named advertising manager for the textile machinery division of Warner & Swasey Co., Cleveland, Ohio. Longenecker has been with Warner & Swasey for eight years in advertising and marketing activities. In his new post he will be responsible for textile advertising, publicity and service literature.

Louie M. Saxon, formerly assistant superintendent at Hyde Park Mills, Covington, Tenn., has been named manager of Herron Yarn Mills, Memphis, Tenn., succeeding R. F. Goodroe, who has resigned.

M. Ray Harden has been named manager of Saco-Lowell Shops' Greensboro, N. C., office. Harden, a graduate of the School of

Textiles, North Carolina State College, has been a sales engineer in the Greensboro district since 1954. Prior to that he was connected with Aurora Mills of Burlington, Spofford Mills of Wilmington, and Erwin Mills at Durham, N. C., in executive positions.

Thomas

James Oscar Thomas, employment manager for Fieldcrest Mills, Spray, N. C., has retired after nearly 42 years of continuous service with the company. Thomas joined Fieldcrest in 1919 after attending Duke University (then Trinity College), and held various positions of responsibility, mainly in the personnel department with which he was associated from the time of its formation in the early 1920s. He was active in the Southern Textile Association for many years, having served as president and as a member of its board of governors.

OBITUARIES

Jack K. Davis, sales engineer for Carter Traveler Co., Gastonia, N. C., died recently in a Phenix City, Ala., hospital after a long illness.

Charles D. W. Halsey, 84, long-time textile merchant and honorary chairman of the Turner Halsey Co., died May 27 at his home in Montclair, N. J. Mr. Halsey formed Turner Halsey together with L. Hamilton Turner in 1908. He first served as vice-president and treasurer and became president in 1911. He served in that capacity until his retirement in 1951. Mr. Halsey was active in industry affairs and was a former trustee of the Textile Merchants Association of New York. Surviving are his widow and three daughters.

Clifford B. Hayes Sr., 65, retired textile executive died May 23 in a Spartanburg, S. C., hospital after an extended illness. Mr. Hayes began his career with the textile industry as general superintendent of the Great Falls Bleachery & Dye Works, Somersworth, N. H., and general manager of the Charles River (Mass.) Bleachery. Mr. Hayes moved to Spartanburg in 1925 in an advisory capacity with Pacific Mills. In 1927 he became general superintendent of Pacific's Lyman, S. C., division, now Lyman Printing & Finishing Co. In 1941 he was named a director and vice-president in charge of Pacific's cotton and rayon manufacturing in the South. He is a past director of the American Cotton Manufacturers Institute and a former member of the New York Cotton Exchange. He is survived by three sons.

James W. Hennessy, 65, head of the cost department of Botany Cottons, Gastonia, N. C., died May 21 while playing golf. A native of Fall River, Mass., Mr. Hennessy had lived in Gastonia for nine years. He leaves his widow and a sister.

Edwin A. Holt, 87, whose family helped pioneer the South's textile industry, died at his home in Burlington, N. C., May 30, after several years of declining health. He was a member of the firm of Lawrence S. Holt & Sons until his retirement a number of years ago. Surviving are two sisters.

James McCutchen, 49, plant manager of the Erlanger Mills, Lexington, N. C., died June 21 in Lexington. A graduate of Clemson, Mr. McCutchen had been associated with Erlanger since 1941. From 1948 to 1958 he served as superintendent of Leward Cotton Mills in Worthville, N. C. He was named manager of Erlanger in 1958. A Rotarian, he was a past president of the Randleman, N. C., Rotary Club, and a member of the Southern Textile Association. Survivors include his widow, a son and three daughters.

Joseph K. Milliken, 86, founder and director of Mount Hope Finishing Co., North Dighton, Mass., died in North Dighton May 27. Mr. Milliken retired as president and treasurer of the firm ten years ago. The company was founded in 1901 and closed in 1951 following a labor dispute. Mr. Milliken was instrumental in the founding of the National Association of Finishers of Textile Fabrics. He was also active in the Textile Traffic Association. Surviving is his widow.

Fred J. Mills, purchasing agent of Swift Mfg. Co., Columbus, Ga., died recently after a heart attack. Mr. Mills had been with Swift for 40 years. Survivors include his widow, a daughter and four sons.

William J. Pharr Jr., 31, secretary and director of Pharr Worsted Mills and Stowe Mills Inc., McAdenville, N. C., died May 19 in a Philadelphia, Pa., hospital. He is survived by his widow and his parents.

Benjamin L. Whittier, 62, holder of the Edgar and Emily Hesslein Fund professorship in the School of Textiles, North Carolina State College, Raleigh, N. C., was killed June 20 at Georgetown, Mass. Prof. Whittier joined the college in 1948. Prior to that he was fabric development engineer with Mount Vernon-Woodberry Mills Inc., Baltimore, Md., for 24 years. He was an active member of Committee D-13 for the A.S.T.M., serving as chairman of subcommittee A-1. He was also a charter member of the Fiber Society and its governing council. Prof. Whittier is survived by his widow, two daughters and a son.

T. Henry Wood, 65, retired textile official, died May 24 in Westminster, S. C. Mr. Wood had served as vice-president and manager of Calhoun Falls (S. C.) Mills, superintendent of Gossett Mills, Anderson and Williamston (S. C.) Mill. He was manager of the Oconee Mills Division of Beacon Mfg. Co. in Westminster for 16 years.

mill news

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS. AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

DURHAM, N. C.—Erwin Mills has been awarded a contract by the Military Clothing & Textile Supply Agency of the Philadelphia Quartermaster Center for cotton sheets, 106" by 63". The contract calls for 225,000 sheets at $358,430.

NEW YORK, N. Y.—Reeves Bros. Inc. has been awarded a contract by the Military Clothing & Textile Supply Agency of the Philadelphia Quartermaster Center for cotton uniform twill. The contract calls for khaki twill between 7.9 and 8.6 oz. per square yard. It is for 105,000 linear yards at $77,628.38.

PHILADELPHIA, PA.—The Military Clothing & Textile Supply Agency of the Philadelphia Quartermaster Center has awarded three contracts for 8.8 ounce cotton sateen, 40" width. The contracts are: Riegel Textile Corp., New York City, 1.4 million linear yards, $804,800; J. P. Stevens & Co., Greensboro, N. C., 1.6 million linear yards, $935,680; and Prestex Inc., New York City, 1 million linear yards, $585,100.

BOSTON, MASS.—The Kendall Co. has purchased the assets of the J. W. Wood Elastic Web Co. of Stoughton, Mass. in a cash transaction. The Wood company's products are "in the same family" with Kendall's elastic health supports that are manufactured at Kendall's Seneca, S. C., plant. Wood employs 350 in the manufacture of wide and narrow elastic web products used in clothing and foundation garments.

HOPE MILLS, N. C.—Brower Mills, recently purchased by Elk Cotton Mills of Fayetteville, Tenn., is now undergoing a modernization program. The company has awarded a contract to F. A. Young Machine Co., Gastonia, for spinning and twister room modernization. This includes adding 2,200 additional spindles making a total of 10,000 spindles fully equipped with NYAF drafting and larger package bobbins.

SPRAY, N. C.—Fieldcrest Mills has been awarded a contract by the Military Clothing & Textile Supply Agency of the Philadelphia Quartermaster Center for 12x12" cotton terry wash cloths. The contract calls for 250,000 at $26,914.50.

GREENVILLE, S. C.—Wunda Weve Carpet Co. has announced the installation of a complete custom carpet production unit. Machinery, materials, construction and personnel for the new unit will represent an additional investment of $100,000 to the company's continuing expansion program initiated last year. Installation of the principal equipment for the new unit is near completion at Wunda Weve's production facilities here. Included in the custom production unit are two 20" pass type tufting looms, manufactured by B & J Machinery

Co. and the Broadstreet Machine Corp. In order to be able to control yarn colors in accord with custom designs, a Klauder-Weldon-Giles 500 lb. capacity skein dyebeck has been added to the custom dyeing department.

Greensboro, N. C.—Burlington Industries Inc. anticipates earnings of between $1.30 and $1.40 a share in the fiscal year ending September 30. This would mean a substantial decline from the $2.81 per share earned in 1960. In that year profits totalled $34.4 million on sales of $912.9 million.

West Point, Ga.—West Point Mfg. Co. reports a 12% decrease in sales and a 47% drop in profits for the nine months ended May 27 as compared with the same period of 1960. Sales for the period totalled $104.9 million as compared with $119.1 million for the comparable period of 1960. Net earnings were $3.3 million as compared with $6.2 million in the first nine months of the previous fiscal year. For the quarter ended May 27, sales were up to $34.9 million from $34.5 million in the previous quarter. Profits in the quarter totalled $514,000 as compared with $1.1 million in the previous quarter. The company said that prospects for earnings in the fourth quarter were encouraging. Unfilled orders are up 15% from the beginning of the fiscal year.

Philadelphia, Pa. — Lowndes Products Inc., producer of nonwoven fabrics, has extended its line through the purchase and installation of Avondale Mills' Curlator fiber web processing machinery. The new equipment produces various weights from 1.3 to 4 oz. per square yard. Initial production includes rayon and nylon fibers—both acrylic and rubber bonded—that may be washed or drycleaned with less than 1% shrinkage. The use of other fibers and binders is being considered. The principal use of Lowndes materials is for interfacing in tailored garments, pleated underskirts, plastic coated upholstery fabrics, shoe fabrics, etc.

Wilmington, Del.—In its current fiscal year, which began February 26, Collins & Aikman Corp. reports that both sales and earnings are running considerably ahead of the corresponding period last year. Final figures for the first quarter are not yet available but sales should be about $17 million as compared with $13.8 million in the first quarter of last year. First quarter results for this year include Bangor Mills which the company acquired in April. Ellis Leach, president, said that the company confidently expects "that the momentum picked up in the first fiscal quarter will increase as we proceed through the rest of this fiscal year." The firm is continuing to explore the possibilities of entering the European Common Market.

Greensboro, N. C.—J. P. Stevens & Co. showed declines in net profits for the second quarter and the first half of the fiscal year. Second quarter earnings were $1.9 million on sales of $119.2 million. This compares with earnings of $2.4 million on sales of $129.5 million in the second quarter of the previous fiscal year. For the first half, earnings were $3.7 million on sales of $217.4 million as compared with earnings of $8.9 million on sales of $244.2 million for the first half of the previous fiscal year.

Dyersburg, Tenn. — Dyersburg Cotton Products Inc., is continuing the equipment modernization program of its plant here with the purchase of six Saco-Lowell SJ MagneDraft spinning frames and one Saco-Lowell FS-2 roving frame. Dyersburg has also placed orders for future delivery of ten additional MagneDraft spinning frames and another FS-2 roving frame, officials said. These orders supplement the two MagneDraft frames which were installed in late 1960. The company has previously installed 48 Saco-Lowell Gwaltney frames.

Greenville, S. C. — Jordan Mills of Columbus, Ga., has purchased a quantity of SJ-3H Saco-Lowell Tru-Set spinning frames for immediate installation, officials have reported. The number of frames and total cost were not made available. The new frames were purchased to widen the range of Jordan's operations and will enable the plant to run staples of ⅞" through 3". In addition to the spinning frames, the company has purchased a number of Saco-Lowell FS-3 roving changeovers, according to Saco-Lowell officials here.

Paterson, N. J.—Cliffside Dyeing Corp. is in the process of completing work on hand prior to closing down. The 20-year-old firm employed more than 150 employees and had a daily capacity of some 75,000 yards on 32 boxes and 8 jigs. It is reported that Gregory Meier, president, Walter Mueller, secretary, and Charles Meier, assistant secretary, will join Sanco Piece Dye Works, Phillipsburg, N. C., where they will supervise a new division.

Carlisle, S. C.—A new $95,000 warehouse addition has been completed at Carlisle Finishing Co. The addition contains about 24,800 square feet of warehouse space and 2,975 square feet of office space.

New York, N. Y.—Beaunit Mills reports a decline in net profits of 48% in the fiscal year ended March 31 as compared with the previous year. Sales for the year were down about 12%. The company had consolidated net income, after taxes, of $3.2 million on sales of $109.7 million. This compares with earnings of $6.3 million on sales of $124.1 million in fiscal 1960. The company noted that to offset price reductions in the tire yarn and textile industries, it had intensified its programs of cost reduction in the purchase of raw materials and supplies, closer control of manufacturing variables and increasing production.

New York, N. Y.—Mt. Vernon Mills Inc. has purchased the papermaker and dryer felt operations of William E. Hooper & Sons Co., Baltimore, Md., and has established William E. Hooper Sales Co. as a division of Mt. Vernon. The Mt. Vernon Dryer Felt Co., a division of Mt. Vernon, will assume responsibility for the manufacture and sales of the Hooper dryer felt operation. Some of the Hooper personnel will be added to the Mt. Vernon staff.

Philadelphia, Pa.—The Military Clothing & Textile Supply Agency of the Philadelphia Quartermaster Center has awarded two contracts for 7.9 oz. cotton uniform twill, 40". The contracts are Reeves Bros., New York City, 105,000 linear yards, $76,630; and J. P. Stevens & Co., 105,000 linear yards, $85,586.

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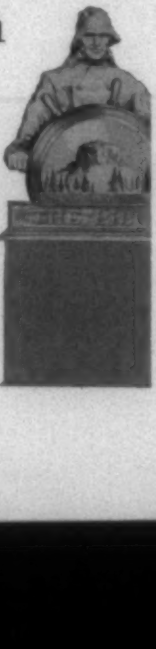


Textile Industry Schedule

For additional data (reservation requirements, membership requirements, program details, etc.) on activities listed here, contact name(s) shown in parentheses.

Sept. 7-8 (Th-F)—Annual meeting, Combed Yarn Spinners Association, The Greenbrier, White Sulphur Springs, W. Va. (Exec. Sec.: James H. Campbell, 427 W. Franklin Ave., Gastonia, N. C.)

Sept. 14-15 (Th-F)—Annual Outing, Chattanooga Yarn Association, The Reed House, Chattanooga, Tenn. (Chattanooga Yarn Association, Chattanooga, Tenn.)

Sept. 15-16 (F-Sa)—Fall meeting, Palmetto Section, A.A.T.C.C., Clemson House, Clemson, S. C.

Sept. 21-22 (Th-F)—Fall meeting, Southern Textile Methods and Standards Association, Clemson House, Clemson, S. C. (Howard L. Loveless, Exec. Sec., S.T.M.A.S.A., P. O. Box 10144, Knoxville, Tenn.)

Sept. 21-22 (Th-F)—Annual meeting, Carded Yarn Association, The Cloister, Sea Island, Ga. (Exec. V.-P.: E. O. Fitzsimons, P. O. Box 869, Charlotte 1, N. C.)

Sept. 23 (Sa)—Fall meeting, Piedmont Section, A.A.T.C.C., Hotel Charlotte, Charlotte, N. C. (Sec.: E. P. Lavoie, Morningstar-Paisley Inc., Box 3622, Charlotte, N. C.)

Sept. 28-30 (Th-Sa)—National convention, American Association of Textile Chemists & Colorists, Hotel Statler, Buffalo, N. Y. (A.A.T.C.C., P. O. Box 28, Lowell, Mass.)

Oct. 5-7 (Th-Sa)—Annual meeting, North Carolina Textile Manufacturers Association, Carolina Hotel, Pinehurst, N. C. (Sec.: T. N. Ingram, 1008 Wachovia Bank Bldg., Charlotte, N. C.)

Oct. 7 (Sa)—Fall meeting, Alabama Textile Operating Executives, Thach Auditorium, Auburn University, Auburn, Ala. (Exec. Sec.: Cleveland L. Adams, Auburn University)

Oct. 12-21 (Th-Sa)—North Carolina Trade Fair, Charlotte Coliseum and Merchandise Mart, Charlotte, N. C.

Oct. 14 (Sa)—Fall meeting, South Carolina Division, Southern Textile Association, Clemson, S. C. (Chairman: E. L. Ramey, Inman Mills, Inman, S. C.)

Oct. 21 (Sa)—Fall meeting, Northern North Carolina-Virginia Division, Southern Textile Association, Cooleemee, N. C. (Chairman: Herman Cone Jr., Cone Mills Corp., Greensboro, N. C.)

Oct. 28 (Sa)—Fall meeting, Eastern Carolina Division, Southern Textile Association, School of Textiles, N. C. State College. (Chairman: Gilbert C. Mays, Erwin Mills, Durham, N. C.)

Nov. 1-2 (W-Th)—Annual meeting, Textile Engineering Division, American Society of Mechanical Engineers, Massachusetts Institute of Technology, Cambridge, Mass. (Chairman: Prof. Elliot B. Grover, School of Textiles, North Carolina State College, Raleigh.)

Nov. 8-9 (W-Th)—Chemical Finishing Conference, sponsored by the National Cotton Council, Sheraton Park Hotel, Washington, D. C. (National Cotton Council, Ring Bldg., Room 502, 1200-18th St., N.W., Washington 6, D. C.)

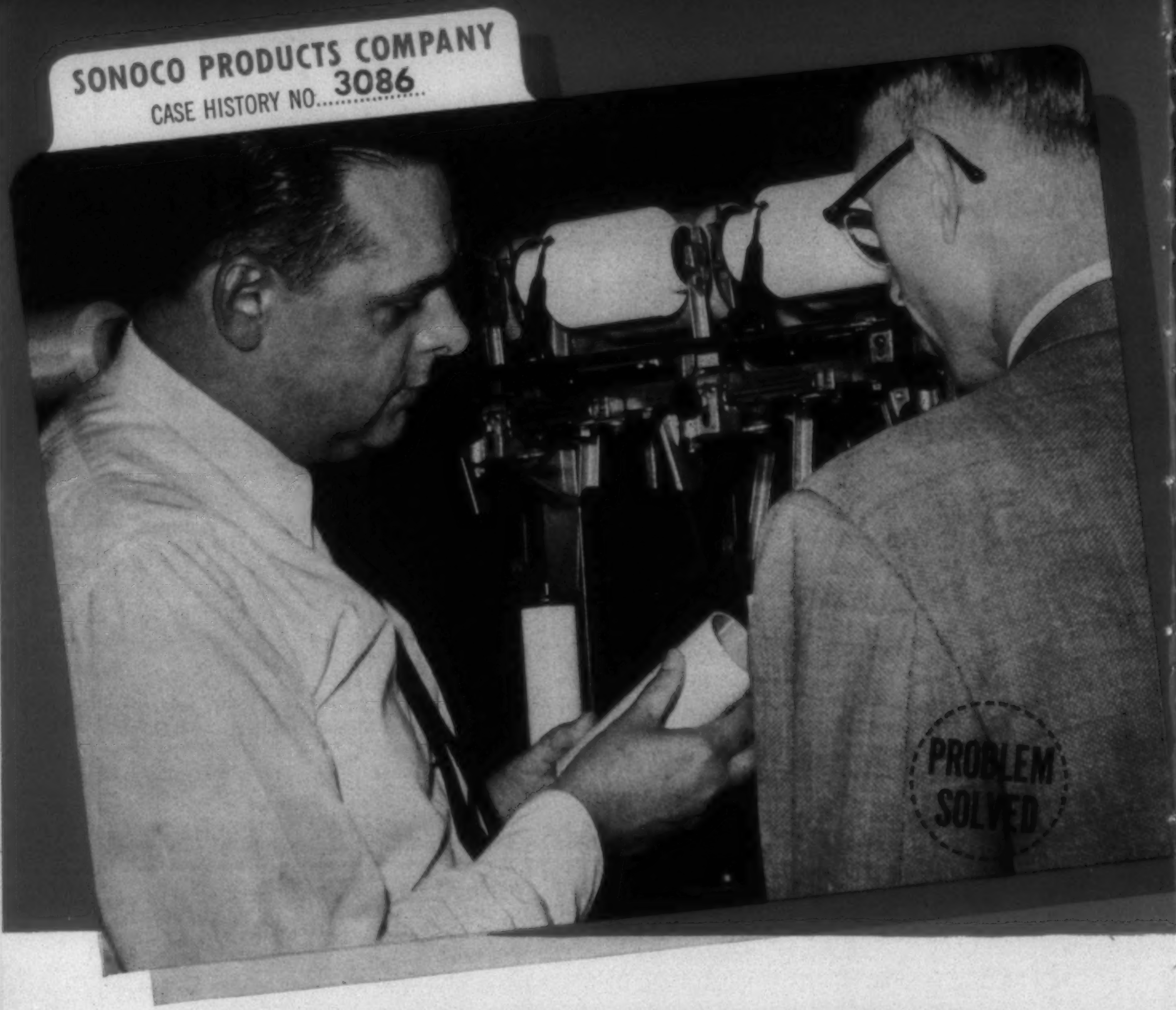
1962

Jan. 11-12 (Th-F)—13th annual Cotton Research Clinic, The Carolina Hotel, Pinehurst, N. C. (National Cotton Council, Ring Bldg., Room 502, 1200-18th St., N.W., Washington 6, D. C.)

April 11-13 (W-Th)—Spring meeting, Textile Engineering Division, American Society of Mechanical Engineers, together with **The Fiber Society, Raleigh, N. C.** (Chairman: Elliot B. Grover, School of Textiles, North Carolina State College, Raleigh.)

May 2-5 (Tu-F)—Annual outing, Carolina Yarn Association, Pinehurst, N. C. (Exec. Sec.: Frank P. Barrie, P. O. Box 11411, Charlotte, N. C.)

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday; (Su) Sunday



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textile bulletin

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Associate Editor . . . . JOHN V. LAWING
Assistant Editor . . . . VICTOR EUGENE LOCKEY
Inquiry & Reader Service . . . . . JACQUELINE RUSSELL

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JUNIUS M. SMITH . . . . . . *President and General Manager*
F. R. CAREY . . . . *Vice-President and Eastern Manager*
(P. O. Box 10, Warwick, R. I.—Telephone WIlliams 1-3957)
MARGARET R. ELLIOTT . . . . *Secretary-Treasurer*
JAMES L. PRENDERGAST . . . . *Advertising Manager*
GEORGE C. FINN . . . . *Advertising Representative*
(271 Valley Rd., Cos Cob, Conn.—Telephone NOrmandy 1-8700, Greenwich, Conn.)
JAMES W. ROBINSON . . . . *Circulation Manager*
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TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, $1.50; two years payable in advance, $2.00; one year, Canada, $3.00; one year, other countries in Postal Union, $5.00; single copies, 25 cents. ¶ A companion monthly journal, THE KNITTER, is published by Clark Publishing Co. and devoted to the interests of the knitgoods manufacturing industry.

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A Change Of Pace In Our Pace Of Change

AUTOMATE or liquidate. That's what lies ahead for U. S. mills according to Riegel Textile Corp.'s William F. Robertson, president of the South Carolina Textile Manufacturers Association *(see page 37)*. Complete automation, he notes, must come to the textile industry as it is coming to so many other basic American industries. Important technological break-throughs have already been made, but more must come, and faster. And the industry must react quickly to them, he warns, reaching forward with increasing willingness to grasp new techniques and new machines.

Concurrent with advances in technology will be changes in the industry's role as an employer. More automated processes will require fewer and more skilled employees. Levels of both general and industrial training will have to be raised. Textile states will have to seek more industrial diversification to sustain and expand their economies. In short a surge of revolutionary changes—social, economic, industrial, educational—will likely completely metamorphize the textile industry as we know it today.

That's the prediction of Mr. Robertson, who sounds it as a warning to those who will be affected by it. That's the challenge facing the industry, and to pull it off, the industry has got to concern itself now with the groundwork.

Assuming that these changes will come to pass—and relatively soon—the first link in the change chain will be the automation of the mills. What constitutes an "automated mill"? What steps would be required to make an ultra modern mill out of a modern mill? What's available machinery-wise that mill management could buy to become automated?

Despite the widespread use of the term, there's no such thing as an automated mill, certainly not in the true sense of the word. The widest use of the term thus far has been applied to the development of the Deering Milliken automatic doffer. But Roger Milliken has been quick to nullify the use of the term in describing what his research corporation prefers to call the automatic doffing system. As such it may eventually become an integral component of an automated processing system, but first it must prove itself as a doffing unit.

A similar sequence must also be followed by the mills themselves. Before they fret over becoming ultra modern, they must first concern themselves with becoming modern. That the industry isn't as modern as present means would make it is borne out by figures compiled by the American Textile Machinery Association for the Senate Subcommittee now looking at current depreciation rates (T. B., April '61).

The figures show, for example, that more than 37% of the spinning frames in place at the end of 1960 were installed prior to 1940 and as early as 1920. Some 27% of the looms in place were installed prior to 1920. Cards take the record, with some 73% having been in operation for more than 40 years.

At the same time recent developments in spinning offer efficiencies of 95-96% with substantial reductions in payroll costs; weaver productivity has been increased as high as 300% with new improvements.

Mills tell the government they can't buy these new developments because unrealistic depreciation schedules keep them on the books too long. They tell American machinery manufacturers they can't buy something one day that might become obsolete the next. They tell their stockholders that profit margins are too thin to permit continuing major expenditures.

The result has been that American textile machinery firms have been and are continuing to take it on the chin. During the years 1958-60 they operated at only 60% of their 1950 capacity. Employment in their shops dropped 40% in the same period. And their shipments for 1960 were down to half the unit production of 1951.

It would be unnatural to be optimistic over the outcome of all the challenges now facing the industry. It's equally unreasonable to expect outside forces to solve the industry's problems. The industry cannot expect the Federal government to provide its markets; the state governments to train its workers; and the textile machinery builders to provide revolutionary productive tools. With the help of these agencies, the mills must create their *own* revolution. And it will require far more positive thinking than has been given to it so far.

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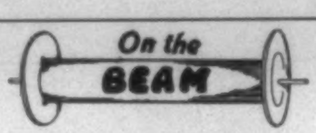

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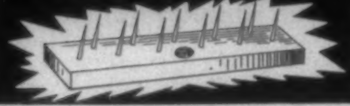

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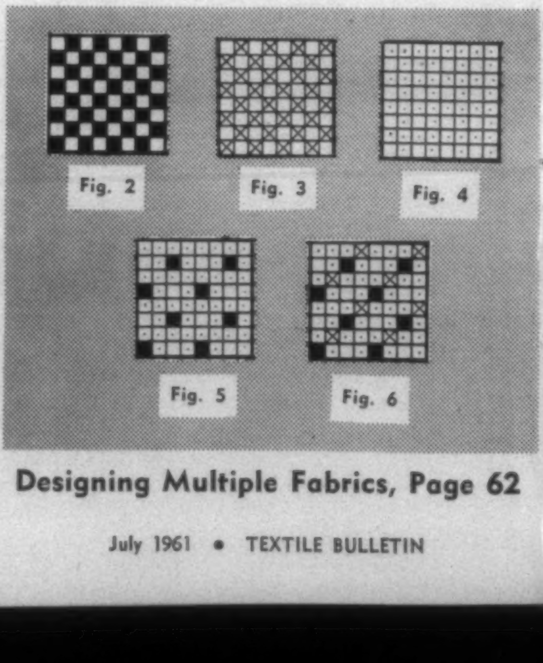

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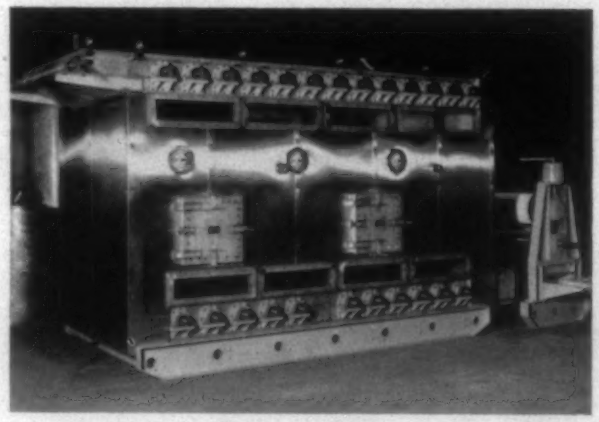

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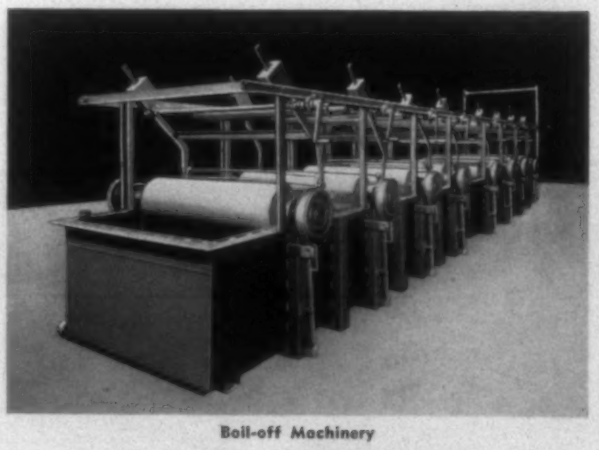

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